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(Complete Index on page 5)

VOLUME XXXIV • NUMBER 1

January, 1965

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*Roseman, E.: *Neurology* **11**:912, 1961. 33664

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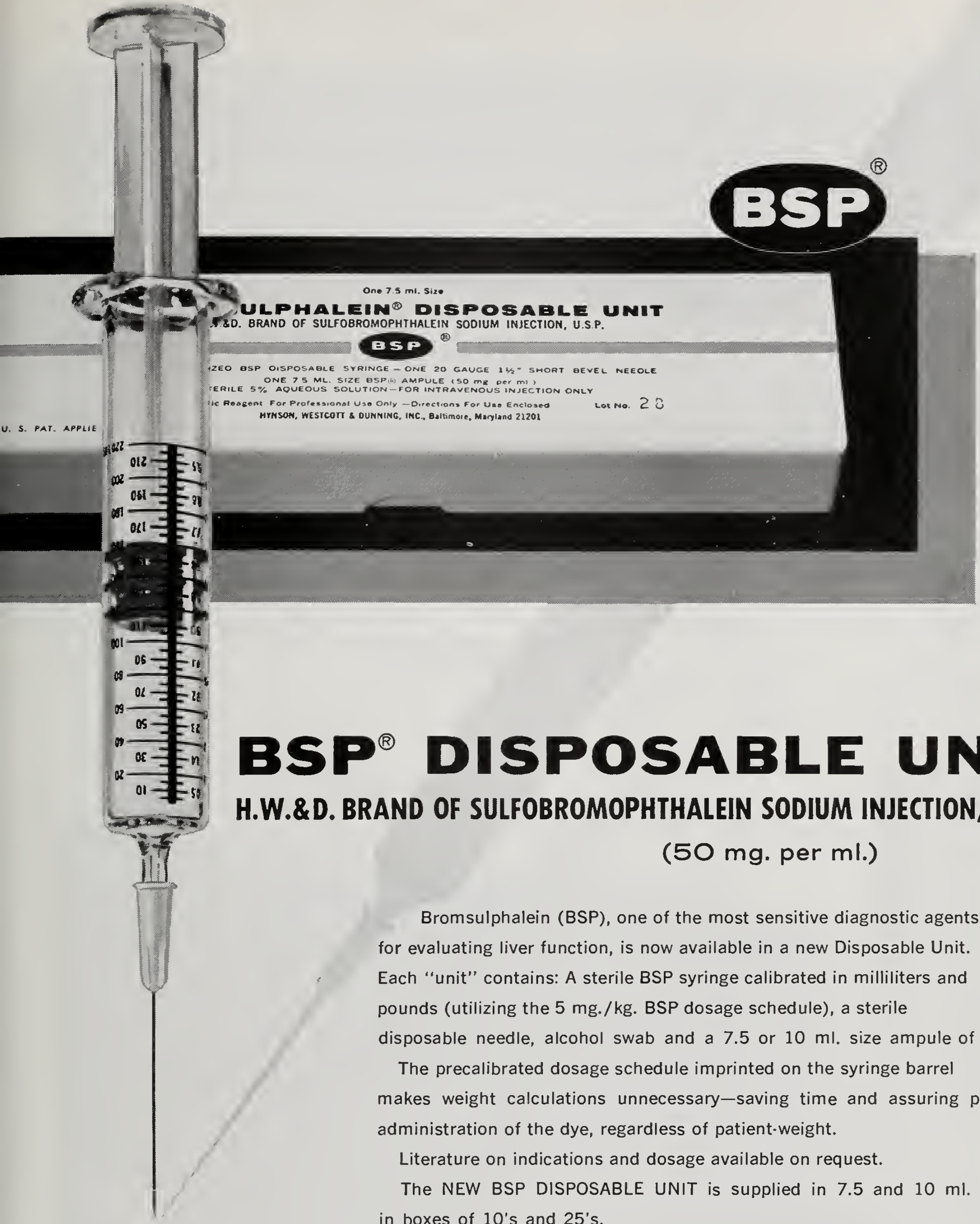
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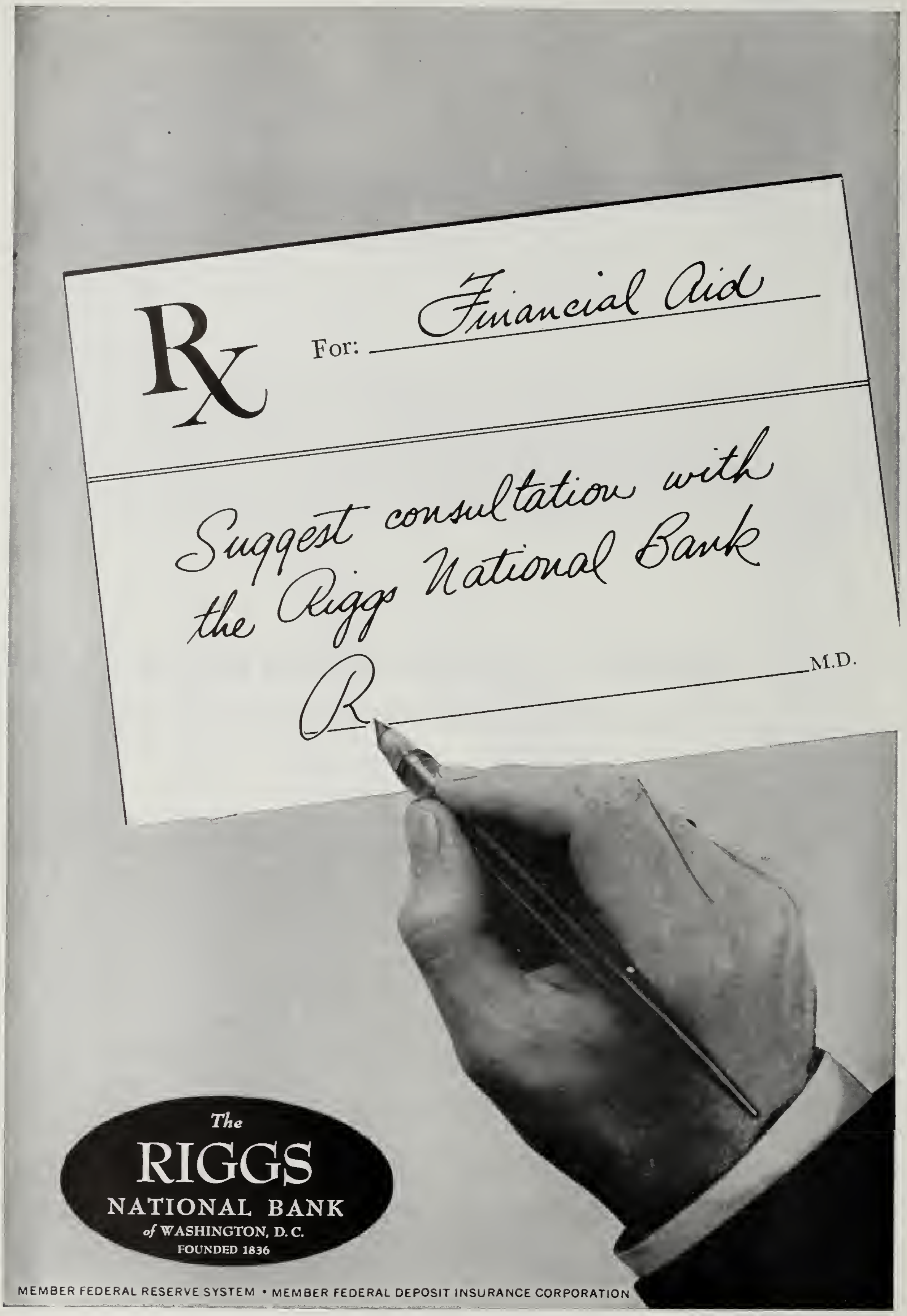

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Yearly Subscription, $4.50
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Second-class postage paid at Baltimore, Md.
Published monthly at
Mount Royal and Guilford Avenues,
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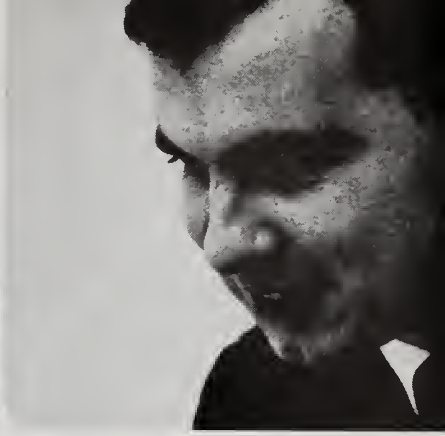

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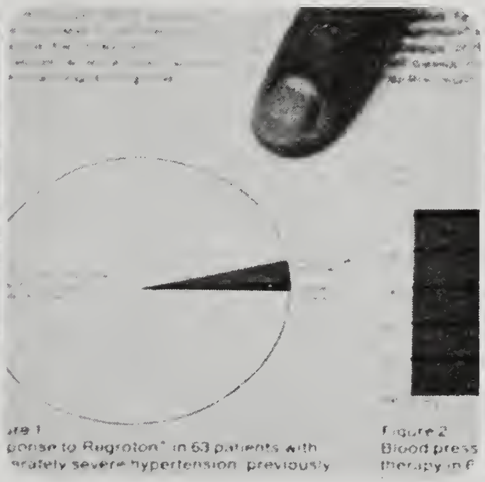

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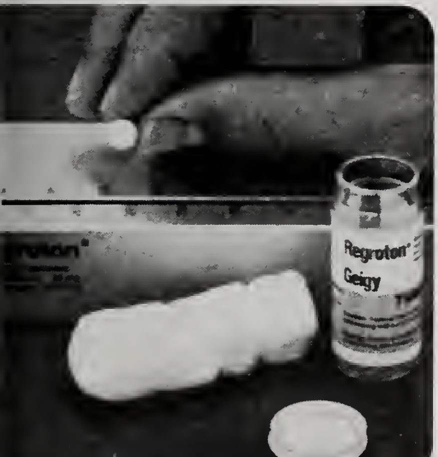

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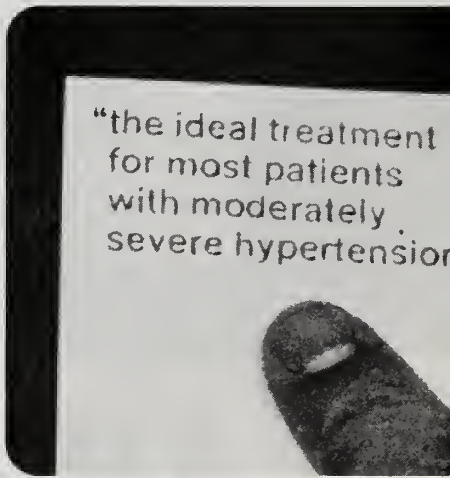

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*Chupkovich, V.; Finnerty, F. A., Jr., and Kakaviatos, N.: The value of chlorthalidone plus reserpine in moderately severe and severe hypertension: A two year study. Presented at the 7th Inter-American Congress of Cardiology, Montreal June 14–19, 1964.

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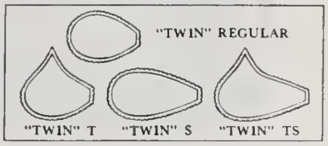

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* AMA Council on Foods and Nutrition: The Regulation of Dietary Fat, *JAMA* 181:411-423 (August 4, 1962).
AMA Council on Foods and Nutrition: Composition of Certain Margarines, *JAMA* 179:719 (March 3, 1962).

BOOK REVIEWS

The Liver and Portal Hypertension, volume 1 in the Series, **Major Problems in Clinical Surgery.** Charles G. Child 3rd, M.D., and J. Englebert Dunphy, M.D., Consulting Editor. Price, $8.50. Pp. 231, illustrated. Philadelphia: Saunders, 1964.

This small book does a major service by making available, in an easily digestible form, information regarding etiology, prognosis and treatment of portal hypertension and treatment of the complications of this entity.

Chapter I. Surgery and Portal Hypertension: A good review of diagnostic and treatment procedures but does not discuss some of the newer diagnostic techniques such as umbilical vein catheterization; gives rather short shrift to medical management, utilizing vasopressive agents—although conclusions may be correct, a somewhat more exhaustive discussion is in order. His discussion of specific shunt procedures is good and excellently illustrated. The conclusion that portal decompression is the treatment of choice must be accepted with certain major reservations, e.g., the state of the art at any given institution and selection of patients at a given institution.

Chapter II. Some Aspects of Hepatic Failure: A good discussion of the major persisting questions of etiology. Management of patient to include diet and treatment of ascites is well covered, with emphasis placed on our remaining areas of ignorance.

Chapter III. Hepatic Encephalopathy: Discusses, with adequate documentation, the state of our knowledge at this time. A practical approach to the problem is presented.

Chapter IV. The Liver and Protein Metabolism: A splendid review of a poorly understood but basic area. The discussion is theoretical, but is presented in an easily assimilable manner—a most important addition to any understanding of liver disease.

Chapter V. Salt Water and Adrenal Steroid Metabolism: A well documented chapter covering both theoretical and practical aspects of ascites formation. The role of the antidiuretic hormone, aldosterone, the effect of and on adrenal steroids, and the effect of surgery on ascites are discussed. The role of the kidney is inadequately treated.

Chapter VI. Liver Lymph—A Critical Component of Hepatic Cirrhosis: Recent studies relating to the probable importance of the lymphatics in both cirrhotics and patients with congestive failure are discussed with both anatomic and physiologic relationships outlined. This is an interesting and provocative discussion but hardly supports the "critical" assertion in the title.

Chapter VII. Experimental Surgery of the Portal Vein, Hepatic Artery and Hepatic Veins. An historical and current review of the status of the surgical thinking and approach to hepatic problems which is interestingly presented, adequate, but not an exhaustive review of the subject.

Melvin D. Small, M.D.

Diseases of Metabolism: Detailed Methods of Diagnosis and Treatment, 5th ed. Edited by Garfield G. Duncan, M.D.; 32 Contributors. Price, $28.00. Pp. 1551, illustrated. Philadelphia: Saunders, 1964.

This book, fifth edition, continues to be outstanding in its field. The previous 4 editions have enjoyed great acclaim, and this edition will add to that acclaim. The object of the book is clearly stated in the first paragraph of the preface: "To provide a bridge of useful understanding between the investigator in the wide area of metabolism and the practitioner of medicine." This is accomplished. There is information for each within its covers.

Seven new chapters have been added and the others revised to keep the material current. For example, the current interest in genetics is dealt with in a new chapter on Inborn Errors of Metabolism. The chapters on diabetes continue to be superlative.

With 32 outstanding contributing authors diversification in overlapping topics occurs. This is an advantage to the reader and indicates excellent editing.

The book is both reference and practical. The double-columned printing is successful in limiting the number of pages, but the increasing amount of material, the resulting weight, and the size of the book make one wonder if 2 volumes is not indicated.

Those interested in the "why" of medical disorders will find this book invaluable. The investigator will have his basic physiology and pathology available, and the clinician will find the history, signs and laboratory data, diagnosis and treatment clear. The book should be in every medical library and on the shelf of clinician and investigator alike.

Thomas E. Curtin, M.D.

Corneal Contact Lenses. By Members of the Contact Lens Section, Department of Ophthalmology, Baylor University College of Medicine, Houston, Texas. Editor: Louis J. Girard, M.D., F.A.C.S.; Associate Editors: Joseph W. Soper and Whitney G. Sampson, M.D. Price, $19.75. Pp. 329, with 342 photographs and diagrams, 56 in color on 6 plates. St. Louis: Mosby, 1964.

Clearly, the editors and contributors are competent. The excellent quality of the text is evidence of their diligence.

As explained in the preface, some of the details may be considered superfluous by some practitioners; but for those who are interested, every step is explained, from the first interview, through lens manufacture and adjustment, fittings and follow-up. The chapter on corneal anatomy and physiology is brief but adequate. The entire book is practical. The table of contents is crisp and detailed. The index is complete. The diagrams are clear, correct, and easily understood. Most of the color plates are good, but a few are not clear enough to be sufficiently illustrative. The references are all reli-

(Continued on page 20)

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Book Reviews

(Continued from page 18)

able and modern. The few grammatical errors and very few typographical errors are not important. The paper, printing, and binding are good.

Some readers will surely be disappointed to find that in all the discussion of keratometry, only 1 manufacturer's instrument is described. Use of trial case lenses for extending the range of the keratometer is described and tables are given only for the use of that same manufacturer's lenses. Time and further experience will tell whether an inordinate amount of text was devoted to promoting a device for regional keratometry, patented and bearing the name of one of the associate editors.

The price is high.

This book is recommended for all contact lens practitioners.

Robert P. Kling, M.D.

X-ray Technology, 3rd ed. Charles A. Jacobi, B.Sc., R.T. (A.R.R.T.), and Don Q. Paris, R.T. (A.R.R.T.). Price, $11.50. Pp. 452, with 306 figures. St. Louis: Mosby, 1964.

This is the third edition of what has now become the basic text for students of schools of X-ray technology. This version continues to represent the nearest approach to the inclusion of all the material usually included in the training program for X-ray technicians. It may also serve as a basic reference source on technique for physicians, including radiologists, who operate diagnostic machines.

The early chapters dealing with fundamental physics of electricity, magnetism and radiations are considerably condensed, which would appear to make them somewhat difficult of comprehension by beginning student technicians lacking strong secondary school mathematical and scientific backgrounds. This material is usually more adequately covered by separate texts in elementary radiation physics. However, these chapters do constitute an excellent review of basic physical principles. The middle chapters on radiographic principles and film processing are well organized and follow a logical development of exposition of major principles in clear, explicit language.

The chief value of this book is in the third and major portion dealing with specific techniques and positioning of patients. The organization of this section is excellent, being broken down into specific areas of the body. Each area includes an adequate anatomic description for the purposes of the technician, listing of the usual films for each X-ray examination, a workable general technique of machine settings, and a detailed description of patient positioning. The positions are adequately illustrated by photographs and radiographs of high quality.

The book is concluded with an adequate glossary of technical terms useful for non-medical personnel, and it is fully indexed. This volume is recommended as a basic reference for physicians and technicians, and as a text on positioning and radiographic technique for student technicians.

Frederick D. Drew, M.D.

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Textbook of Pediatrics, 8th ed. Edited by Waldo E. Nelson, M.D., D.Sc. With the Collaboration of 85 Contributors. Price, $18.00. Pp. 1636, with 471 figures and 144 tables. Philadelphia: Saunders, 1964.

This classic pediatric textbook has undergone 8 editions since it was first published in 1933. The format of this edition has changed little from its predecessor. New sections have been added: Errors in Pigment Metabolism, Pseudomonas and other gram negative infections, Infections with unclassified mycobacteria and Congenital Defects of Muscle. Several chapters, Psychologic Development and Disorders, Disturbances of Fluid and Electrolyte, Inborn Errors of Metabolism and the Skin, have been completely rewritten. Others have been brought up to date. One hundred and eighty-five pages have been added to the text since the last edition. The section on child psychiatry has been placed in a more prominent position in the text.

The problem of including the many aspects of pediatrics in a single volume is becoming increasingly difficult. Descriptions of many of the illnesses of childhood are of necessity short. However, an adequate bibliography for further reading by students and practitioners compensates for this limitation. Many of the modern pediatric textbooks, as this one, have been prepared by several collaborators. The increase in pediatric knowledge and the intense subspecialization that has developed in pediatrics within the past 2 decades have required this approach. This text has eminently succeeded in covering the entire field of pediatrics.

The volume is well indexed. The humorous notation in the index of the seventh edition, "Birds, for the 1–1413" is missing from this edition!

This textbook of international renown is recommended to students and practitioners alike as being up to date and comprehensive in all areas of pediatric practice and child welfare.

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1. Griffith, R. S., and Black, H. R.: Current Ther. Res., *6*:253, 1964.

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January 1965 VOLUME XXXIV • NUMBER 1

Salt-losing Nephritis: Response to Licorice Therapy[*][†]

Report of a Case

ALVIN E. PARRISH, M.D., F.A.C.P.
Professor of Medicine, George Washington University School of Medicine

SALT-LOSING NEPHRITIS was first described by Thorn et al[1] as a syndrome consisting of renal disease with hypotension, hyponatremia, a negative sodium balance, failure to respond to desoxycorticosterone, and a norml adrenal response to ACTH. The following case is one of pyelonephritis due to *E. coli* infection producing a salt-wasting syndrome meeting the criteria for salt-losing nephritis. Correction of the salt loss seemed to occur during "licorice" therapy and suggests that licorice may be a useful adjunct in the treatment of this disease and that licorice produces sodium retention through a mechanism different from that of desoxycorticosterone.

Report of Case

J. F. R., a 62-year-old unemployed Negro, was admitted to the hospital with a history of cough productive of brown sputum and associated with substernal pain of 2 months' duration. He had lost about 15 pounds in weight during this period, and weakness and disability had been progressive. Six days before admission he noted faintness and diarrhea associated with cramping para-umbilical pain. He gave a history of urinary frequency, a decreased urinary stream, and more recently dribbling and cloudy urine.

On admission he was found to have a blood pressure of 80/60, a temperature of 103°F, and a pulse rate of 104. He was poorly developed and emaciated and appeared chronically ill. Decreased resonance and coarse rhonchi were found over both lower lung fields. Tenderness was present in the right upper quadrant of the abdomen and in the epigastrium. The prostate gland felt normal.

Initial laboratory studies showed a leukocytosis of 23,000 with 87 per cent neutrophils, 28 per cent of which were band forms, 9 per cent lymphocytes and 4 per cent monocytes. The hematocrit was 30 and sedimentation rate 26 mm. per hour. The urine had a specific gravity of 1.015, no protein or sugar, 3 to 5 white blood cells per high-power field, many of which were glitter cells, and a positive culture for *E. coli*. Serum sodium was 132 mEq. per liter and potassium 6.0 mEq. per liter. A blood culture was positive for *E. coli*. A chest X-ray film was interpreted as showing interstitial pulmonary fibrosis in the lower lung fields bilaterally. An intravenous pyelogram showed hydronephrosis of the right kidney.

Subsequent laboratory work showed a phenolsulfonphthalein excretion of less than 5 per cent in 15 minutes, serum cholesterol of 122 mg. per 100 ml., blood sugar of 92 mg. per 100 ml., and total protein of 7.2 Gm. per 100 ml. with 3.7 Gm. of albumin and 3.5 Gm. of globulin. The blood urea nitrogen rose to a maximum of 55 mg. per 100 ml. on his fourteenth hospital day and thereafter declined to normal by his thirtieth hospital day.

He was given chloramphenicol, 4 Gm. daily, and his temperature returned to normal by the seventh hospital day. Because of his low blood pressure and subjective improvement on reciving intravenous saline a Thorn test was done which showed a normal response to ACTH.

Two months later a sodium balance study was started. The results of this are shown in figure 1. The sodium intake was calculated to contain 150 mEq./day. His food was weighed before and after meals and an aliquot taken for sodium and potassium analysis. All urine and feces were collected and similarly

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[*] From the George Washington University Medical Division, D. C. General Hospital, Washington, D.C.

[†] Supported in part by Grant HE-03732-05 from the United States Public Health Service.

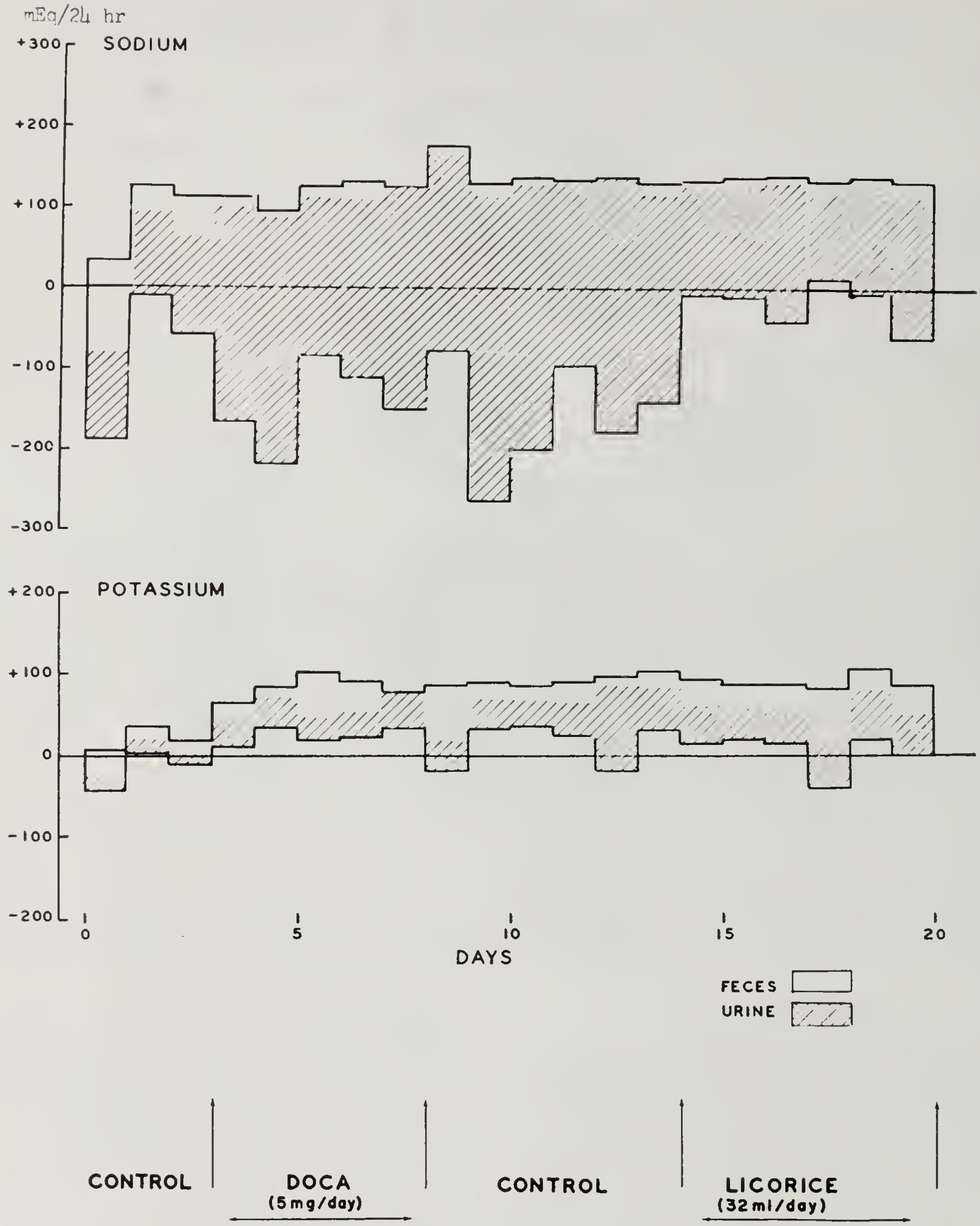

FIG. 1. Sodium and potassium balance in a patient with "salt-losing nephritis." Licorice was given as fluid extract of glycyrrhiza in 4 equal doses daily. Intake is plotted upward from "O" and output downward from intake using the scheme of Elkinton and Danowski.[2]

weighed and analyzed. As can be seen from figure 1, he had a net sodium loss and potassium retention during the initial part of the study. Desoxycorticosterone acetate, 5 mg. daily I. M., was then administered for 5 days. During this time he continued to be in negative sodium and positive potassium balance. Clinically, however, he felt better and had a rise in blood pressure to 120/90 mm. Hg. When desoxycorticosterone acetate was discontinued he continued to show the same pattern with a maximum sodium loss of 390 mEq./day. After a week of no therapy licorice extract was started in the form of fluid extract of glycyrrhiza, 8 ml. 4 times daily by mouth. At this point his sodium loss decreased, and although he achieved a positive balance on only 1 day, his sodium excretion diminished considerably. Potassium retention remained about the same.

A left kidney biopsy performed 3 months after admission was interpreted as showing chronic pyelonephritis (figure 2).

Because of persistent pyuria, oxytetracycline was started. Potassium retention continued, and the serum potassium rose to a maximum of 8.3 mEq. per liter. This was controlled by the oral administration of a hydrogen-ammonium cycle resin (SKF 647) with a fall in serum potassium to 3.2 mEq./L after 5 days. The serum sodium fell to 129 mEq./L. Subsequent to this the patient was maintained on Chloromycetin® and a high sodium diet. He became discouraged with treatment, signed out of the hospital, and was lost to follow-up.

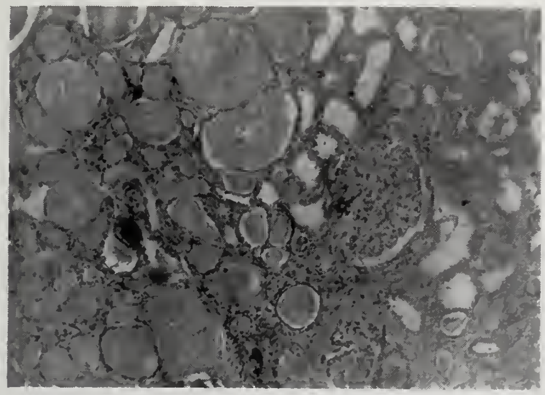

FIG. 2. Kidney biopsy showing chronic pyelonephritis.

Discussion

Salt-losing nephritis has been a recognized syndrome since its description by Thorn, Koepf and Clinton[1] in 1944, although its existence had been suggested by Peters et al[3] as early as 1929. Levere and Wesson[4] in a review established more specific criteria for the entity. These are (1) signs and symptoms consistent with dehydration in the presence of a normal salt intake (5–8 Gm./day) and relieved by 10–20 Gm. salt intake daily, (2) a clinical state not relieved by desoxycorticosterone but with evidence of normal adrenal function, and (3) evidence of renal disease persisting on a high salt intake. The underlying pathology in reported patients includes pyelonephritis,[5–8] glomerulonephritis,[3, 9, 10] and cystic disease of the kidney.[11] Pyelonephritis has been suggested as the most common cause. Recently it has been thought that *Ps. aeruginosa* may be the chief offending organism in inducing renal sodium loss.

Our patient appears to be an example of "salt-losing nephritis" as evidenced by his clinical course and his negative sodium balance even when given desoxycorticosterone acetate. It was of particular interest that he responded to the oral administration of "licorice" with a lessening of his sodium loss.

The sodium retaining effect of extracts of licorice was first noted by Revers[12] in 1946. Later the sodium retention and potassium loss with extracts of licorice were confirmed,[13] and further study demonstrated that licorice could be used in the therapy of adrenal insufficiency.[14] The active principal of licorice extracts has been shown to be glycyrrhizinic acid.[15] This differs in its action from desoxycorticosterone in that it will not maintain the life of adrenalectomized rats[16, 17] nor adequately sustain bilaterally adrenalectomized patients.[18] It does, however, decrease 17-ketosteroid output in man,[19] produce adrenal atrophy in the guinea pig,[20] and decrease the ability of the rat to resist cold and to respond normally to histamine stimulation,[21, 22] suggesting a depression of ACTH production.

The experience with our patient suggests that the effect of licorice extract on the kidney must be different from that of desoxycorticosterone acetate. The precise site of action in the renal tubule of desoxycorticosterone is not clear. Recent work[23] has suggested that sodium is actively reabsorbed by the distal nephron and only passively absorbed by the proximal nephron. Others,[24, 25] however, believe that there is active transport of sodium by both the proximal and distal convoluted tubule. Stop-flow studies suggest that aldosterone exerts a major effect (if not all) in the distal nephron.[26] If desoxycorticosterone and aldosterone have the same site of tubular activity, perhaps licorice has its effect more on the proximal nephron. The lack of kaliuresis associated with the sodium retention following licorice in this patient also would suggest that the tubular site of action is somewhere other than in the distal nephron where exchange of sodium for potassium occurs.

Summary

The case of a 62-year-old man with salt-losing nephritis due to chronic pyelonephritis treated with extract of licorice has been reported. Licorice therapy reduced renal sodium wasting but did not result in an increased excretion of potassium.

Licorice therapy may be of value in the management of salt-losing nephritis.

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(*Continued on page 18*)

Case Selection for Light Coagulation of Medical and Malignant Lesions of the Ocular Fundus*

J. O'ROURKE, M.D.

Professor of Surgery (Ophthalmology) and Director, Division of Ophthalmology, Georgetown University School of Medicine

Recent advances reported in the use of retinal light coagulation seem to indicate that certain lesions, considered untreatable until now, may respond with better overall results if a prudent selection of cases is made. With this in mind it seems appropriate to attempt an initial evaluation of the method with respect to its limitations and its value for control of these serious disorders. Such comment, based on reports from several clinics, as well as our own experience, will focus on diabetic retinopathy, small fundus tumors, and lesions that lead to retinal detachment.

Principle of Light Coagulation

In simple terms, light coagulation of the retina was conceived by its inventor, Dr. Meyer-Schwickerath,[1] as an imitation of retinal burns that can result from viewing the solar eclipse. Such beams will burn the retina if focused on one spot by the optical system of the eye, and, if the spot has enough dark pigment to produce intense, local heat, by absorbing the light. In this arrangement the light source must be strong enough to pass through the eye (cornea, aqueous humor, lens, and vitreous humor), and the pigment layer of the retina must be dense enough to absorb the light energy and change it to heat. When this happens a 'spot weld' is made which, if properly directed, can be used to close off blood vessels, seal a retinal hole, anchor the retina to underlying tissue by scar formation, or necrotize small tumors. The method depends on ischemia, scarring and necrosis applied to fundus lesions in various combinations.

When conditions are not proper the coagulation effect is incomplete. For example, a small pupil or an opaque lens will cut down the light energy available to focus on the retina. An eye that is too long, front to back (high myopia), or one that has lost its lens (cataract surgery or dislocation) needs a cumbersome contact lens to concentrate light energy to one focus on the retina. A pale fundus (blond or albino) cannot absorb light energy efficiently and requires higher energy input and repeated sittings. Some of these factors are diagrammed in figure 1.

Medical and Vascular Diseases of the Fundus

Certain medical lesions of the fundus may be treated by light coagulation alone. In others it is necessary to supplement the coagulation effect with diathermy applied to the posterior scleral surface after surgical exposure. Light coagulation results from absorption of light energy. Diathermy coagulation depends on electrical resistance of the tissue.

Some of the guidelines in case selection and in individual case study can be shown in the following conditions:

A. Lesions That Lead to Retinal Detachment:

Detachment is by and large a disease of aging, associated with vascular changes in the fundus vessels in many cases. There are 2 common conditions of the fundus that lead to frequent detachment of the retina. One is equatorial degeneration of the peripheral retina (figure 2) and the other is an actual retinal hole, seen before the retina has elevated.

About 10 per cent of elderly persons (over 50 years) with a history of detachment, high myopia, or cataract surgery will show these changes if carefully screened, and about 40 per cent of them will detach if neglected.

Equatorial degeneration means that a patch of peripheral retina shows thinning (cystoid

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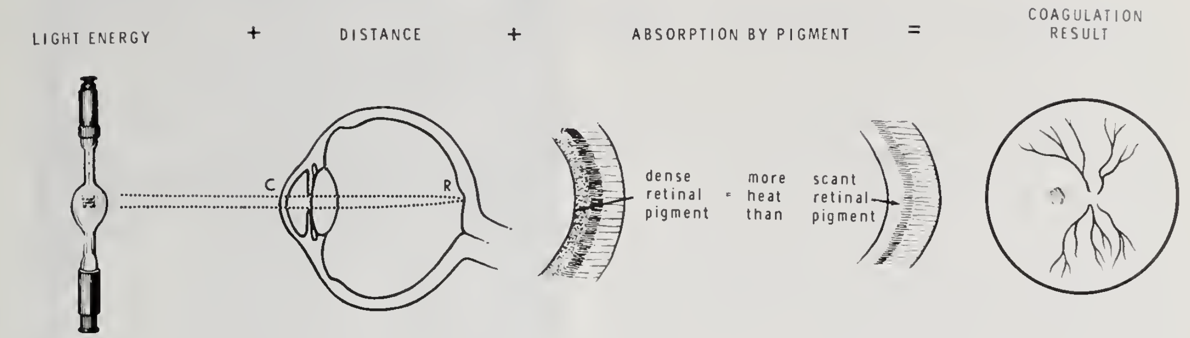
* Supported by Grants NBO 4333 and NBO 3284 from the United States Public Health Service.

LIGHT COAGULATION OF THE RETINA



Strength determined by distance to retina, pupillary size & pigment density.

If pupil width equals eye length (C to R), as in rabbit, need 50% less energy for coagulation than if eye length is 3 times pupil width as in humans.

Just as heavily smoked glass becomes warmer in sunlight than does lightly smoked glass.

Focus of heat derived from absorption of light coagulates local tissues causing scar ischemia & necrosis.

FIG. 1. Principles of photocoagulation of retinal lesions.

changes), ischemia (white, lattice lines), and scattered pigment. A retinal hole may often be an advanced stage of this equatorial change, and it may exist many weeks before detachment occurs. It is not correct to say that these changes are seen only in older patients, but they are more frequent in that group. In each situation accurate photocoagulation can be expected to seal off the affected area and prevent a gross detachment.

If the pupil cannot be dilated or when the lens and vitreous are opaque, it is not possible to place the coagulation accurately. This may lead to complications which include coagulation of iris tissue near the pupil, excessive coagulation of the retina causing retraction detachment, and vitreous hemorrhage from necrosis of a larger vessel. In such cases it is better to use diathermy when the lesion is visible but not accessible to light coagulation.

Light coagulation may also be used to seal retinal tears that have been incompletely closed in the repair of gross detachment by scleral buckling and diathermy procedures.

B. Retinal Lesions in Systemic Disease:

Neovascularization of the retina occurs in the late stages of diabetes and is a major cause of blindness. It also appears in advanced stages of sickle-cell disease, nephritis, Eales' disease, and central vein occlusion. The main cause of visual loss is hemorrhage and proliferation of these new vessels into the vitreous cavity, often in both eyes.

When light coagulation is successful it can be expected to control this process in its early stages by closing off the new vessels. When effective, there is regression of vessels occluded and clearing of adjacent hemorrhages and exudates in the retinal tissue. It is important to underscore the need to limit attempts to early cases and to use the second eye for control observations until the natural course of the process has been charted. The technique requires the use of small, discrete coagulations done in several stages at 2-week intervals.

When coagulation is attempted in advanced cases with poor visibility and large vascular formations, the complications of vitreous hemorrhage and retraction detachment of the retina are more likely to result. A cautious approach with small areas closed off at each sitting is necessary, even in early cases, and patient coöperation is imperative.

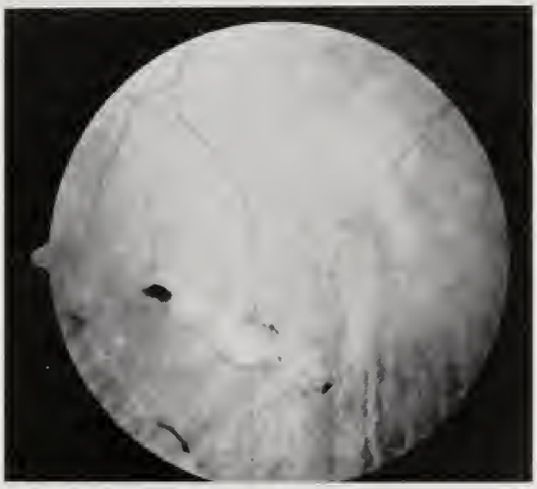


FIG. 2. Equatorial degeneration of retina showing cystoid areas of thinning and pigmentary disturbance. This is the most common lesion requiring light coagulation.

Fundus Tumors

One hesitates to discuss this aspect of light coagulation in detail because this method of dealing with ocular malignant tumors is not yet widely accepted. Nonetheless, the possibility that it might prevent enucleation in certain desperate cases deserves consideration.

Based mainly on experiences reported by the German team under Dr. Meyer-Schwickerath,[1] it is possible to eliminate melanoma, hemangioma, metastatic lesions, and certain retinoblastomas, when they are elevated less than 3 diopters. The light beam does not penetrate deeper than the elevation represented by 3 diopters, and the chance of metastatic spread is low in tumors below this dimension.

Fundus tumors require severe treatment in order to surround the mass with dense scar and to necrotize the central mass. Since retinoblastoma is nonpigmented it requires an especially high energy beam. In all tumors it must be decided if the vision saved or restored is worth the risk of side-effects that occur in about 10 per cent of the cases treated (vitreous hemorrhage and macular edema).

Tumors over 6 diopters' elevation require enucleation, and those between 3 and 6 diopters show less promise and need supplemental X-ray therapy. Diathermy is seldom used because of the risk of weakening the scleral wall, although Weve[2] has previously reported an extensive series of tumors responding to this therapy (20 patients followed 20 years).

Carefully done, the light coagulation method can be expected to eliminate small tumors and prevent extension of any retinal detachment adjacent to them. When attempts are made to deal with larger tumors complications are more frequent and the need for radiotherapy is greater. Recurrent growth is an indication for enucleation and so is any psychologic deterioration in patients unable to tolerate the necessary long course of treatment and follow-up.

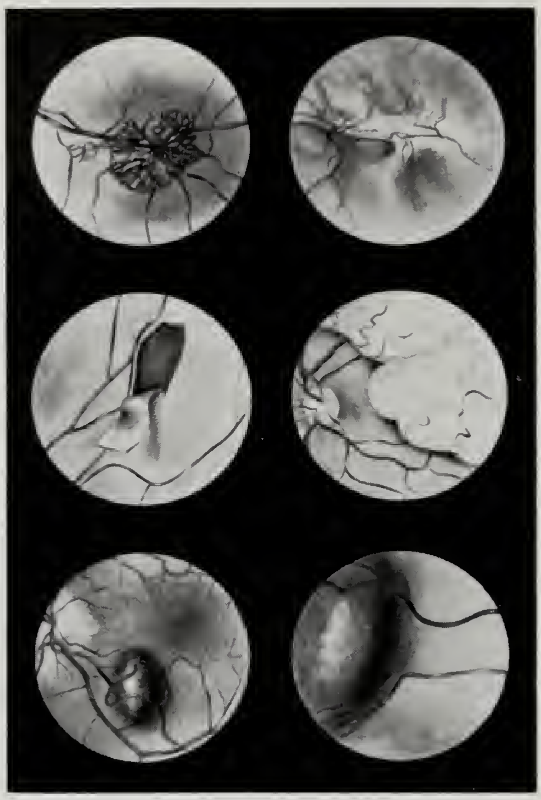


FIG. 3. Examples of basis for case selection for photocoagulation: Upper. Early neovascularization of peripheral retina seen in diabetes mellitus, suitable for coagulation therapy, versus advanced neovascularization, which is unsuitable. Middle. Single retinal tear without detachment, suitable for detachment, versus gross detachment, which is unsuitable. Lower. Small melanoma of choroidal layer elevating overlying retina less than 3 diopters, occurring in the only remaining eye, which would be considered for coagulation, versus large melanoma of the choroid, over 6 diopters elevated, unsuitable for coagulation (enucleation advised).

Summary

As light coagulation therapy completes 15 years of study in various retinal diseases, the matter of case selection has come to be of crucial importance (figure 3). This is principally because the variety of conditions now treatable by coagulation has increased and includes the early stages of many medical, malignant, and pre-detachment conditions. When emphasis is placed on selection in such processes as diabetes, sickle-cell disease, and central venous thrombosis, it is possible to alter the expected progression and improve the prognosis for useful vision. When very small tumors are coagulated with close observation the follow-up results have been encouraging. When therapy has been too energetic or attempted in advanced lesions, the complications have been frequent.

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Management of Inoperable Prostatic Cancer

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THE MANAGEMENT of inoperable carcinoma of the prostate is a multifaceted problem. The current practical clinical management began its modern phase at the time of the introduction of the administration of estrogens by Herbst, and castration by Huggins, in 1940. Since then many therapeutic agents have become available for clinical utilization and mechanical modalities for relief of obstruction developed.

Obstruction which results from carcinoma of the prostate can be mechanically managed by indwelling urethral catheterization, suprapubic cystostomy, or prostatovesiculocystectomy. The indications for each of these forms of relief of obstruction are sufficiently self-evident in the various individual clinical situations not to require any detailed discussion. The indications are varied and individual for castration, administration of estrogens, administration of the antiphlogistic steroids, administration of TACE®, administration of Thio-Tepa®, pituitary radiation, utilization of radioisotopic fluid, utilization of radon seeds, P^{32} injection, radium needle radiation, cobalt irradiation of the prostate, radiation castration, and adrenalectomy.

The basic principle which should be applied in the management of all these situations involves the withholding of any type of therapy until, if and when either pain from metastasis or unsatisfactory general physical status, or both, are present. Whether castration or the administration of any of the chemotherapeutic agents should be utilized is dependent chiefly upon the attitude of the patient to castration. In the event that the individual will not submit to castration, chemotherapeutic agents should be used. If castration is carried out the therapeutic agents should not be administered unless castration proves inadequate in controlling the clinical picture. If castration is not effective, the therapeutic agents should be used seriatim. The dosage of estrogens and antiphlogistic steroids should depend upon the response of the patient to these agents. All things being equal, the smallest effective dose of any of these agents is the appropriate dose. One mg. stilbestrol is a practical starting dose. The dose may be increased as time goes on, depending upon the appraisal of the successful control of the malignant state.

In view of the fact that there has been much difference in policy regarding time of institution of these various types of therapy, it is appropriate to state what would seem to be the basic biologic principle involved in these problems.

If a prostatic malignant state behaves biologically in such a way that the measures described prove effective, these measures will be more satisfactory and spectacular in advanced stages of the disease than if they are introduced at the time a positive diagnosis is made. The duration of extension of life expectancy should be greatest when this basic principle is followed out. Along with the institution of these various forms of management, vigorous general support is a very important aspect of the management of these patients. Therapeutic vitamins and blood transfusions are the principal agents in general support when the hemoglobin and red blood cell counts become less than an acceptable normal.

Adrenalectomy has been pretty much discarded as an appropriate procedure. However, in situations in which control has been lost following castration and the administration of the antiphlogistic steroids, should the patient or his family wish adrenalectomy done with the understanding that the percentage chance of favorable response following this procedure will not be over 20, there is no reason why this procedure should not be carried out.

In so far as the various means of destroying the pituitary are concerned, one may use any one of the numerous methods available. Since the betatron can completely and successfully destroy the pituitary, where the betatron can be used this is the most appropriate. Pituitary irradiation with high voltage (1 to 2 million volt equipment) or cobalt may be used with varying degrees of favorable clinical response.

Prostatovesiculocystectomy has been mentioned because the terminal stages of extensive bladder involvement are so horrible that this procedure may be advisable, if only for the relief of suffering from extensive bladder involvement when this is the most prominent feature of the clinical picture.

In situations in which the pain aspect of the clinical picture becomes uncontrollable by the usual means the institution of cervical cordotomy is justifiable.

The injection of radioisotopes is a field in which a very satisfactory clinical response results when carried out by capable urologists.

There is hardly any type of malignant disease which is more varied in its clinical course nor more varied in the response to the many abovementioned forms of therapy than cancer of the prostate. When favorable response occurs the improvement is often spectacularly effective. The main objective is to make a diagnosis of prostatic cancer when complete surgical eradication is possible.

In the first group of 7 patients which I treated on an endocrinologic basis, the estimated extension of life expectancy was 37 months. Today it should be longer.

Family Service of Montgomery County Broadens Services

Family Service of Montgomery County, Maryland, which for many years has offered professional case-work services to individuals and families who are County residents, is in the process of developing new programs and expanding existing services to better meet the needs of the rapidly growing area.

Of particular importance in a voluntary agency of this type is the ability to provide service to applicants when they need it and avoid long waiting lists for people who come to the agency seeking help with a critical problem. Therefore, in addition to the traditional case-work program with individual clients, the agency recently has established programs in family group counseling and group case-work methods, both of which are designed to make the professional service available to more people. Further programs under development will provide consultation services to other agencies and groups in the community in order to focus on the preventive aspects in family breakdown.

The agency is located at 26 South Perry Street, in Rockville. The Director is Francis J. Ryan, D.S.W., who recently retired from the Army after a tour as Chief of Social Service at Walter Reed General Hospital. The staff consists of 9 social workers, all graduates of professional schools. Consultants to the agency include John Kafka, M.D., a psychiatrist on the staff at Chestnut Lodge, and Curtiss E. Knighton, M.S.W., a consultant in group work processes. Included among members of the Board are Maxwell Boverman, M.D., and the Honorable Alfred D. Noyes, of the Montgomery County Juvenile Court.

A special project now under way at the agency and supported by the State Department of Mental Health is concerned with exploring methods in helping individuals and families where the problem is focused on excessive use of alcohol. This project is in its demonstration phase with a special staff member, Jane F. Carrigan, as co-director and Anthony Zappala, M.D., as consultant.

Since it is estimated that approximately 12,000 families in Montgomery County have problems which are manifested by difficulty in the use of alcohol, it is felt that a Family Service Agency should take an added interest in this group with a view toward providing special services which may be indicated.

Further information concerning the role of Family Service as a social agency in Montgomery County may be obtained from the Director, Mr. Ryan, or by visiting the agency in Rockville.

Advances in Clinical Electrodiagnosis

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THE ADVENT of practical electronics has furnished new tools to physicians to aid in clinical diagnosis. These techniques have greatly expanded the accuracy and usefulness of electrodiagnosis in clinical practice, both because of their increased sensitivity and because they are performed by physicians. One of these is electromyography and the other nerve-conduction velocity studies.

Electromyography is valuable in the diagnosis, management and prognosis of lower motor-neuron and primary muscle disease[1, 2] (table 1). It is based on the principle that an electrical current precedes contraction of the musculature and this current can be picked up by an electrode, magnified by an amplifier, and recorded visually on a cathode ray oscilloscope and audibly on an audio-amplifier. Permanent records can be made on tape and film but are not necessary for the routine examination. The electrical currents are not picked up from the entire muscle but rather from a physiologic unit known as a motor unit, or a combination of these units. This unit consists of a single anterior horn cell and its axon plus the muscle fibers innervated by this axon. The number of muscle fibers innervated by each axon varies from 10 to a thousand, depending upon the size of the muscle and the

TABLE 1: Characteristic Patterns of Activity

Disease Process	Normal Motor Units	Polyphasic Potentials	Fasciculation Potentials	Fibrillation Potentials	Positive Sharp Waves	Myotonic Bursts	Insertion Potentials	At Rest
Normal	Interference pattern	<10%	Only with fatigue (not polyphasic)	None	None	None	<5 secs.	Silence
Hysterical paralysis	Decrease in number	<10%	None	None	None	None	<5 secs.	Silence
Physiologic block	Decrease in number to	<10%	None	None to a few	None to a few	None	<5 secs.	Silence or abnormal potentials
Lower motor neuron disease (neuropathy, etc.)	Decrease in number	<10%	If anterior horn cell involved	Present	Present	None	<5 secs.	Abnormal potentials
Upper motor neuron disease	Variable	>10%	None	None	None	None	<5 secs.	Activity with spasticity
Myopathy	Small in size, numerous	<10%	None	Occasionally present	Occasionally present	None	± <5 secs.	Silence
ALS, Progressive spinal muscular atrophy	Decrease in number	>10%	Present—of pathologic type	Present	Present	None	>5 secs.	Abnormal potentials
Myotonias	Normal with gaps	<10%	None	None	None	Present	>5 secs.	Abnormal potentials
Polymyositis dermatomyositis	Small amps, normal number	>10%	None	Occasionally present	Occasionally present	None	>5 secs.	Abnormal potentials
Myxedema	Repetitive discharges; duration longer than normal.	>10%	None	None	None	Present	>5 secs.	Silence

function performed. Abnormalities in any portion of this motor unit can be detected by electromyographic studies (figure 1). It is customary to divide disorders suitable for electromyographic study into 2 large categories—neuropathic and myopathic. The differentiation between the groups depends upon the presence or absence of various potentials, each of which has a characteristic wave form and sound (figure 2).

One category of neuropathic diseases is peripheral neuropathies and nerve injuries.[3] These cannot be diagnosed electromyographically until wallerian degeneration has taken place, which occurs between 13 and 35 days but on the average is considered to be 21 days. After this has occurred there will be an absence or a decrease in the number of normal motor units and an increase in the number of polyphasic motor units, and denervation potentials will appear. The degree of injury as well as its localization can be determined by performing this test. Potential for recovery can be followed more clearly by serial electromyographic testing, since a decrease in the number of denervation potentials and an increase in the number of voluntary motor units signify recovery. These findings almost invariably precede the clinical return of function, in some cases up to several weeks. For example, a patient with Bell's palsy was referred for electromyographic testing prior to surgical decompression of the facial nerve, since there was no clinical evidence of return. This examination showed denervation potentials, but there were also a few isolated voluntary motor units. It was suggested that surgery be delayed and another EMG be performed. This showed further evidence of return of function which eventually progressed to full recovery.

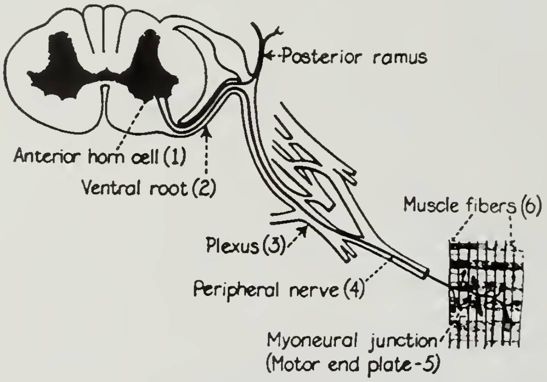


FIG. 1. Six anatomical sites along motor unit pathway where specific pathologic processes may produce electromyographic abnormalities (reproduced by permission of authors and publisher[1]).

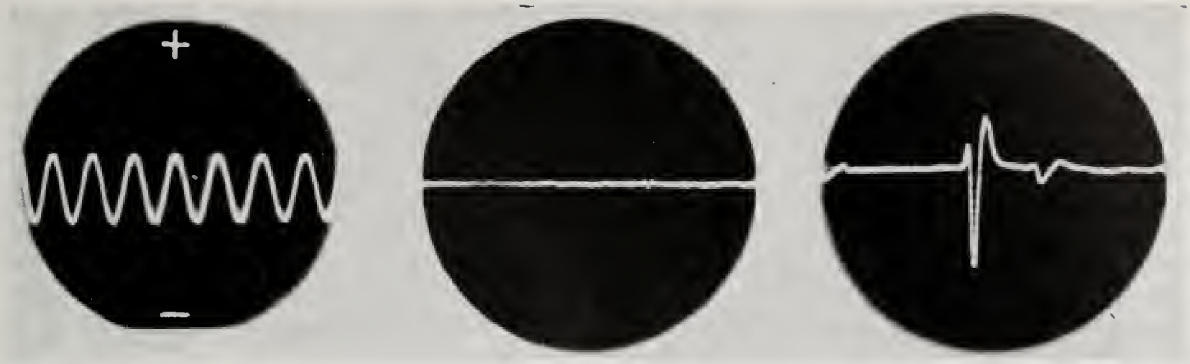
Hysteria may mimic a peripheral nerve injury, but electromyographic studies can readily differentiate this from true paralysis because no denervation potentials are present and the patient can be tricked into exhibiting normal motor-unit potentials. For example, a patient was referred to the Physical Medicine Department with a diagnosis of possible peripheral nerve injury. Bizarre gait and absence of atrophy led to the suspicion of hysteria. Electromyographic studies showed no evidence of denervation potentials. Voluntary motor unit potentials were elicited by distracting techniques. The diagnosis of hysteria was confirmed.

Brachial plexus injuries can be diagnosed and differentiated from both root compressions and peripheral nerve injuries by the pattern of denervation in the various muscles. For example, a patient was sent for electromyographic studies with a diagnosis of a musculocutaneous nerve injury following a fracture dislocation of the head of the humerus. Electromyographic studies showed profuse denervation in all muscles of the shoulder and arm except for those innervated by the long thoracic nerve of Bell and the suprascapular nerve. Since these nerves leave the plexus prior to the formation of the 3 cords it was established that this was a brachial plexus injury at the level of the cords.

Root compressions in both the cervical and the lumbar area can be confirmed by finding denervation of all muscles in a given myotome, including those innervated by the posterior primary ramus. For example, a patient with back pain was referred for electromyographic studies. This revealed no evidence of denervation in the quadriceps muscle, but denervation was present in the anterior and lateral compartments of the leg. Examination of the paraspinous musculature revealed a strip of denervation to be present. The impression was denervation of the fifth lumbar nerve root which was confirmed by surgery.

Cord lesions which involve the anterior horn cells, such as ALS or progressive spinal musculature atrophy, can also be detected. They will show denervation potentials which are widespread and which do not conform to any peripheral nerve or myotome pattern. The sometimes difficult differentiation of a cervical cord tumor from ALS can be aided by the use of electromyography, where denervation in the lower extremity would indicate the presence of ALS rather than a cervical cord tumor involving upper motor neuron tracts.

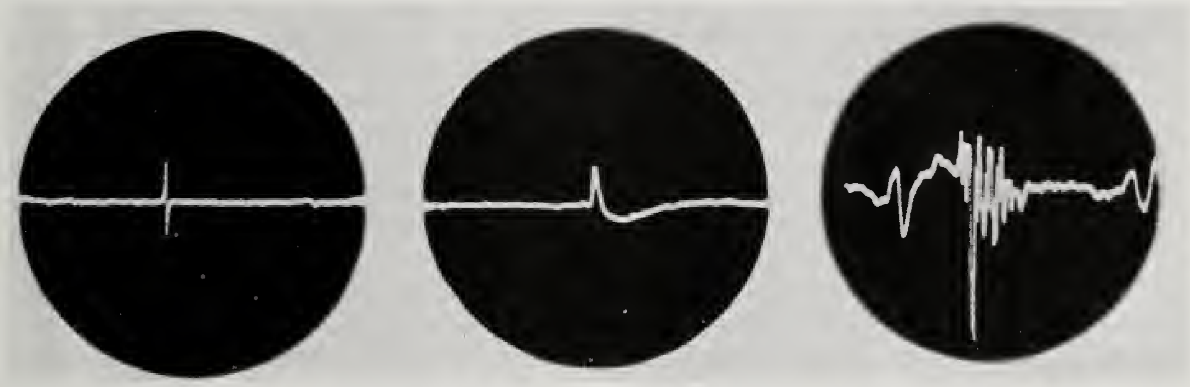
An important use of electromyography is distinguishing the potential or possible neurologic



A—Calibration voltage; 60-cycle, 200 microvolts per inch sensitivity as used in all of the following electromyograms.

B—Normal voluntary muscle at rest showing "electromyographic silence."

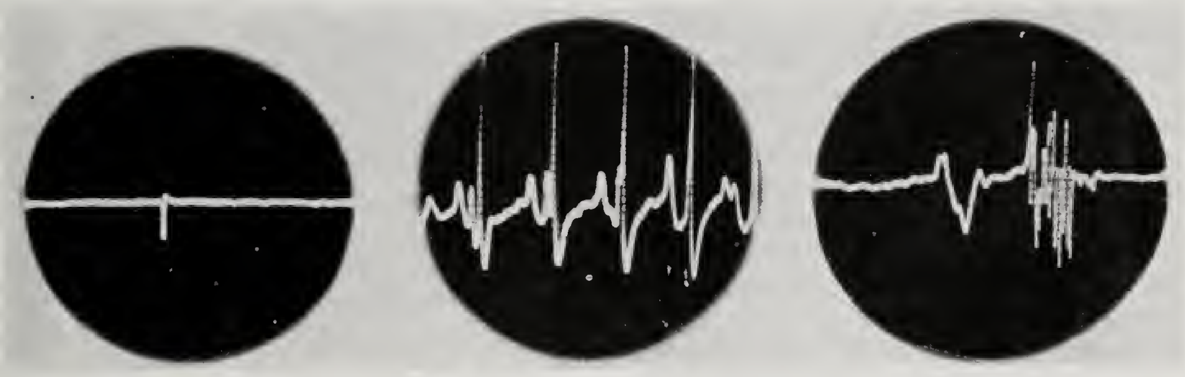
C—Normal motor unit voltage, showing large characteristic negative phase both preceded and followed by smaller positive phases.



D—Denervation fibrillation voltage, showing characteristic initial positive phase closely followed by an almost equal negative phase, recorded from a patient having lower motor neuron disease.

E—Denervation positive voltage, showing rapid rise and fall of initial positive phase and low amplitude of the long negative phase, recorded from a patient having lower motor neuron disease.

F—Complex or highly polyphasic motor unit voltage, showing many positive and negative phases, recorded during voluntary effort from a recently re-innervated muscle.



G—Nerve voltage, showing initial negative phase of short duration followed by positive phase having low amplitude but longer duration, recorded from normal voluntary muscle.

H—High-frequency voltages recorded from a patient having myotonia.

I—Complex or highly polyphasic fasciculation voltage recorded from a patient having progressive spinal muscular atrophy.

FIG. 2. Characteristic electromyograms (reproduced by permission of The Meditron Company, 5440 North Peck Road, El Monte, California).

complications of surgery or of spinal anesthesia from preëxisting conditions.[4] If such a complication should be suspected it is vital to obtain electromyographic studies within the first few days after surgery, since the lesion may have previously existed but remained unrecognized. If such is the case, denervation potentials will be present early which could not be the result of the anesthesia or the surgical procedure. For example, a patient was sent for electromyographic studies on the day following surgery when it was noted that he had a foot drop. A pressure neuropathy from the restraining leg strap was suspected. Electromyographic examination revealed denervation potentials in all muscles of the leg innervated by the common peroneal nerve. Since denervation potentials following operation would not appear for at least 2 weeks it was recognized that this was a neuropathy probably related to the patient's alcoholism.

The myopathic group of diseases have their characteristic potentials (table 1). Muscular dystrophies exhibit potentials on volition which are decreased in amplitude and are irregular in shape; these are labeled dystrophic potentials. Occasional denervation potentials will be noted. The myotonias, including myotonic dystrophy, paramyotonia congenita, and myotonia congenita exhibit the characteristic bizarre high-frequency potentials on insertion of the electrodes which readily establish their diagnosis.

Several of the collagen vascular diseases including polymyositis and dermatomyositis exhibit a spectrum of electromyographic findings which consist of polyphasic motor-unit potentials, denervation potentials, and a decrease in the number of voluntary motor units.

The limitations of electromyography should be outlined. Electromyographic findings do not become positive in nerve injuries until approximately 21 days. Electromyography is a clinical examination and as such is subject to the usual diagnostic errors of misinterpretation or omission. The former error, which usually is a false positive test, is not likely to occur in the hands of a skilled electromyographer. The latter error, which may be termed a false negative test, is decreased if the examiner understands the clinical problem and is able to sample other areas if necessary. For example, a patient was sent to the Physical Medicine Department with the diagnosis of an ulnar nerve injury. Electromyographic sampling of the entire arm revealed denervation potentials in all muscles, more marked in the distal musculature. Sampling of the opposite arm revealed the same findings but to a lesser degree. It was suspected that the patient had ALS rather than an ulnar nerve injury.

Nerve conduction-time studies are based upon the principle that a peripheral nerve can be stimulated by an electric current and will thereby conduct an impulse.[5] Electrodes placed over a muscle innervated by this nerve will record the action potential on the oscilloscope. The usual technique of clinical examination is to apply a stimulus to the nerve at 2 points along its course. The time lapse from the point of stimulation to arrival of the impulse at the muscle is recorded. The simple formula, velocity is equal to the distance divided by the time, enables one to calculate the conduction of the nerve between the 2 points of stimulation. The value of normal nerve conduction-times is generally accepted to be between 40 and 60 meters per second. A partial list of conditions in which nerve conduction-time velocity studies are of value include the carpal tunnel syndrome, tarsal tunnel syndrome, peripheral nerve injury and peripheral neuropathies, infectious neuronitis, and Charcot-Marie-Tooth disease.

There are several difficulties associated with the performance of nerve conduction-time studies. The first is a limitation in the number of peripheral nerves which can be studied, since the nerve must be superficial throughout a large portion of its course. This limits the study to 3 or 4 peripheral nerves. Inaccuracies of results develop due to variations in room temperature and difficulty in making a precise reading on the oscilloscope. In obese patients it is frequently difficult to apply a stimulus to the nerve. At the present time nerve conduction-time studies may be considered to be a complement to electromyography and not a substitute for it.

Summary

Electronic advances have brought into clinical use the electrodiagnostic tools of electromyography and nerve conduction-time studies. The nature of these examinations requires that they be performed by a physician. Their diagnostic usefulness in the general categories of neuropathic and myopathic diseases has been outlined.

The author wishes to thank Dr. C. James Duke for his valuable suggestions in the preparation of this manuscript.

(Continued on page 18)

Methyldopa in the Treatment of Hypertension*

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Since the initial communication of Oates et al[1] reporting that methyldopa lowered blood pressure in hypertensive patients additional studies have attested to the efficacy of this drug as an antihypertensive agent.[2–7] Over the past 2½ years methyldopa (Aldomet®) has been utilized in this clinic usually in conjunction with sulfonamide saluretic agents in the long-term treatment of hypertensive outpatients. The drug was compared with guanethidine in 13 patients for periods averaging 6 months on each agent. In addition, adverse hepatic effects of methyldopa have been documented.

Materials and Methods

During the period of study 33 patients were treated in the hypertension clinic of the Mt. Alto Veterans Administration Hospital with methyldopa. Twelve patients had severe hypertension with 4 in the malignant phase, 19 with moderate hypertension, and 2 with mild hypertension.‡ The mean age was 45 years, and 25 of the group were Negroes. Only 3 patients exhibited normal electrocardiograms, the majority showing left ventricular hypertrophy. Twelve patients had blood urea nitrogen levels prior to therapy in excess of 25 mg. per 100 ml. of blood.

The interval between clinic visits averaged 2.5 weeks. At each clinic visit blood pressure recordings in the supine, sitting and erect positions were taken by a physician. Methyldopa was administered in divided doses 3 times daily. Doses were adjusted at each clinic visit in order to obtain optimal blood pressure control within the range of tolerable side-effects. The sulfonamide diuretics which were used were either hydrochlorothiazide, 50 mg. twice daily, or chlorthalidone, 100 mg. once daily.

Bromsulfalein (BSP), serum alkaline phosphatase, serum glutamic oxaloacetic transaminase (SGOT), and blood urea nitrogen (BUN) determinations were done after the patient had been instructed to fast overnight and omit breakfast. The amount of BSP retention was determined according to a modified method of Greene. Alkaline phosphatase was done by the method of Bodansky. SGOT was determined by a modified Reitman-Frankel method utilizing Dade® reagents, and the BUN was estimated with the Technicon® auto-analyzer.

Results

Effectiveness of therapy. Blood pressure changes in only 24 patients will be discussed, since information regarding the percentage change in blood pressure was not pertinent for 4 patients whose methyldopa was discontinued because of side-effects and for 5 patients who were transferred directly from guanethidine to methyldopa without an intervening control period.

Twelve of the 24 patients either became normotensive or had average mean blood pressure§ readings that were more than 20 per cent lower than the pretreatment mean pressures in both the supine and erect positions.|| An additional 4 patients exhibited average mean blood pressures during the treatment period that were lower than their pretreatment levels by 20 per cent or more in the erect but not in the supine position. The

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* This study was supported in part by Grant H-720 from the United States Public Health Service.

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‡ In the hypertensive grading of patients we utilized the criteria of the Veterans Administration Coöperative Study on Antihypertensive Agents, published in "A double-blind control study of antihypertensive agents," Arch. Int. Med., 1960, **106**, 81.

§ Mean blood pressure = diastolic blood pressure + ⅓ pulse pressure.

|| Detailed tabular data on individual cases can be obtained by writing to the authors.

average duration of therapy in these 16 patients was 40 weeks (range 13 to 96 weeks). The average dose of methyldopa was 1,365 mg. (range 540–2,375 mg.) per day. Fourteen of the 16 received saluretic agents concurrently.

The remaining 8 patients did not demonstrate reductions in their average blood pressures during the treatment period that were greater than 10 per cent of their pretreatment values. The average maximum dose of methyldopa in these patients was 1,906 mg. (range 1,750–3,000 mg.) per day. Seven of the 8 were treated concurrently with oral saluretic agents.

Tolerance. The records of 10 patients who were maintained with decreases of 20 per cent or more in mean blood pressure in the erect position were evaluated at 6 weeks, 3 months, and at the end of therapy. Dosage and blood pressure levels at intervals as close as possible to these periods were tabulated. Three of the 10 patients evidenced manifestations of tolerance (table 1). The average daily dose of these patients at 6 weeks was 1,333 mg. and at 6 months 2,450 mg., all of the patients being treated throughout with saluretic agents. The blood pressure was slightly higher at 6 months despite the higher doses. In the remaining 7 patients the average daily dose was 1,000 mg. at 6 weeks and 1,321 mg. at 12 months with the average blood pressure lower at the 12-month interval. Five of these 7 patients were treated concurrently with saluretic agents throughout the entire period.

TABLE 1: Tolerance to Alpha Methyldopa

	Duration of Treatment								
	6 weeks			3 months			Final*		
	Blood Pressure (mm. Hg)		Daily Dose Alpha Methyldopa (mg.)	Blood Pressure (mm. Hg)		Daily Dose Alpha Methyldopa (mg.)	Blood Pressure (mm. Hg)		Daily Dose Alpha Methyldopa (mg.)
	Supine	Standing		Supine	Standing		Supine	Standing	
Tolerant patients (3)	157/103	159/112	1,333	173/113	163/116	1,500	165/114	170/114	2,450
Nontolerant patients (7)	145/96	131/95	1,000	147/99	140/105	1,214	133/96	118/88	1,321

* Average duration of treatment for tolerant patients, 6 months; for nontolerant patients, 12 months.

Side-effects. Side-effects were minimal. Drowsiness at the initiation of treatment was noted in most patients. It usually disappeared after several days on a given dose to recur again for a few days if the dose was increased. One patient, however, experienced persistent drowsiness over the course of 6 months, with the result that his employer complained that the patient was constantly falling asleep at his desk.

Transient symptoms suggesting orthostatic hypotension were noted in 20 of the 33 patients. For the most part these symptoms consisted only of mild dizziness on arising in the morning, but 3 patients experienced syncope which did not recur when dosage was reduced.

Four patients complained of diminished sexual drive after beginning methyldopa. In 1 case reduction in dosage sufficed to restore potency. In another patient the addition of a placebo without reduction in the dose of methyldopa led to restoration of normal potency. In the 2 remaining patients the complaint continued after their treatment was changed. It is, therefore, unlikely that the impotence was related to methyldopa in 3 of the 4 patients.

Four patients volunteered that they were having frequent dreams which seemed to be related to therapy. The dreams ceased, however, despite continuation of treatment. Four patients complained of "tenseness" and nervousness while taking methyldopa. Other complaints less frequently encountered were dry mouth in 2 cases, headaches in 2, and constipation in 1. These minor subjective complaints were not necessarily related to the use of the drug.

Side-effects necessitating discontinuation of methyldopa occurred in only 3 instances. In 1, referred to above, persistent drowsiness ceased when the patient's therapy was changed to guanethidine. A second patient complained of vomiting and headaches which came on approximately 20 minutes after taking his medications. These symptoms recurred on 2 separate trials, and the patient refused further treatment with the drug. One other patient developed a macular, pruritic skin eruption after 4 weeks of methyldopa therapy. The rash cleared completely within 2 weeks of discontinuing treatment, and a second trial of the drug was not attempted.

Drug reactions. Fever and alterations in hepatic function tests associated with methyldopa administration have been reported in the literature.[3, 5, 7, 8, 9] In the present series of 33 patients 2 cases of chills occurred and each was associated with alterations in liver function tests but without jaundice. Liver biopsy was obtained at the height of the illness in 1 of these patients (D.M.) and showed changes consistent with mild hepatitis due to drug reaction. Retesting with methyldopa was accomplished 9 months later at a time when all tests of liver function had returned to normal. The same alterations in serum glutamic oxaloacetic transaminase levels, cephalin flocculation tests, and bromsulfalein retention that had been present in the initial illness recurred on retesting.

The second patient, W.P., experienced the onset of chills 13 weeks after initiation of therapy at a time when he was receiving 2,250 mg. methyldopa per day, chlordiazepoxide, and hydrochlorothiazide. A mild elevation in the serum glutamic oxaloacetic transaminase level to 90 units and a bromsulfalein retention of 8 per cent were noted at this time. The transaminase level fell to 61 units in spite of continued administration of the drug. Retesting with ½ the previously administered dosage of methyldopa following a 3-month cessation did not cause a recurrence of the chills, but the transaminase level rose from an initial level of 8 to 61 units at the end of the month. Bromsulfalein retention was essentially unchanged, falling during this month from 7.7 to 5.7 per cent.

One case of jaundice occurred in a patient who was known to be alcoholic. The acute onset of severe icterus was noted after he had taken methyldopa for 10 weeks in a dose of 750 mg. per day together with chlorthalidone, 100 mg. per day. Liver biopsy at the time of the acute illness showed florid cirrhosis. Retesting with methyldopa was accomplished 3½ months later, the patient receiving 750 mg. daily for 6 weeks. There was no recurrence of jaundice during this time. Tests of hepatic function, performed during the sixth week, did not reveal any alteration from the slightly abnormal values obtained prior to retesting. No other symptoms or physical signs of hepatic disease were encountered in the present series.

Fifteen patients who had been taking methyldopa continuously had normal bromsulfalein retention, serum alkaline phosphatase levels, and serum glutamic oxaloacetic transaminase levels after an average period of 10.7 months (range 5 weeks to 17 months). The mean dose was 1,535 mg. (range 750–2,750 mg.) per day at the time the determinations were done. Two patients who died of renal failure during the course of this study did not show evidence of hepatic disease in gross or microscopic postmortem examinations of their livers.

*Comparison with guanethidine**. Thirteen patients were treated with guanethidine and saluretic agents for sufficient periods of time to allow comparison with their response to methyldopa plus saluretic agents. The average duration of treatment with guanethidine was 30 weeks (range 3 to 94 weeks) and 25 weeks with methyldopa (range 10 to 57 weeks). The average blood pressure on guanethidine therapy was 166/109 mm. Hg supine and 139/100 mm. Hg in the erect position. The average supine blood pressure during methyldopa was 166/112 mm. Hg while the average erect blood pressure was 151/109 mm. Hg. The difference in mean orthostatic blood pressure levels on the 2 drugs was significant ($P < .02$). Twelve of the 13 patients received saluretic agents concurrently with both drugs while the remaining patient did not. The average daily dose of guanethidine was 32 mg. (range 12.5–69 mg.) taken once daily, and 1,610 mg. of methyldopa (range 1,125–2,250 mg.) taken in 3 divided doses.

Two of the above patients were transferred from methyldopa to guanethidine because of failure to respond significantly to large doses of the former. Seven other patients in the comparative series were receiving daily doses of methyldopa of 2,000 mg. or more at the time of transfer. On guanethidine, all of these patients were maintained with lower orthostatic blood pressures and in 4 with lower supine blood pressures as well. Four of these 9 patients were classified as severe hypertensive patients and 5 as moderate. Eight of the above were treated with saluretic agents on both regimens and 1 was not. Another patient was transferred to guanethidine after his blood pressure rose to 230/150 mm. Hg with severe daily headaches and weight loss of 9 pounds which occurred while he was taking methyldopa plus chlorthalidone. His blood pressure has since been maintained for over 1 year at average levels of 156/102 mm. Hg. supine and 128/91 mm. Hg erect with guanethidine plus a saluretic agent.

One patient with malignant hypertension who had manifested erratic control while taking guanethidine with hydrochlorothiazide for 27 weeks was transferred to methyldopa and chlorthalidone. He maintained lower blood pressure levels during 18 weeks of treatment with the latter drug in an average daily dose of 2,000 mg. Higher blood pressures then recurred in spite of increasing doses. The blood urea nitrogen level had been 61 mg. per 100 ml. at the beginning of methyldopa therapy. Because of his mental confusion it is not certain that he took his pills correctly during this period. He subsequently died in renal failure. The 2 remaining patients in the series, both with moderate hypertension, maintained equally good control with either methyldopa or guanethidine.

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* Ismelin®, a product of Ciba Pharmaceutical Company, Summit, New Jersey.

Symptoms of orthostatic hypotension were more frequent and of greater severity while the patients were taking guanethidine. However, in no case was it necessary to discontinue treatment with guanethidine because of orthostatic hypotension; brief discontinuance and subsequent reduction of dosage were sufficient to alleviate the problem.

Seven of the 13 patients developed failure of ejaculation while taking guanethidine. In no case, however, was guanethidine discontinued because of this side-effect although the patients were informed that guanethidine was the causative agent. Only 1 of the 13 patients complained of any change in sexual function while taking methyldopa. This consisted of transitory impotence responding to a brief reduction in dosage. In spite of the side-effects noted above, none of the 13 patients expressed a preference for methyldopa over guanethidine. Two patients had occasional episodes of diarrhea while taking guanethidine whereas none complained of bowel disturbances with methyldopa.

Blood urea nitrogen levels were taken serially in 10 patients prior to and after completion of at least several months on each type of therapy. Excluding the patient who died in renal failure the average blood urea nitrogen level was 32 mg. per cent during methyldopa treatment as compared to 36 mg. per cent during treatment with guanethidine. The difference was not statistically significant and could be accounted for entirely by increase in blood urea nitrogen in 2 azotemic patients whose diastolic blood pressure levels in the erect position were 18 and 25 mm. Hg lower, respectively, during the guanethidine treatment period. In 1 of these patients a reduction in guanethidine dosage with consequent higher orthostatic blood pressures resulted in lower levels of blood urea nitrogen.

Comments

In the present study methyldopa in conjunction with oral diuretics proved effective in maintaining significant decreases in blood pressure in 16 of 24 patients. The use of saluretic agents seems indicated in view of the potentiation of action of methyldopa noted by ourselves as well as others.[2, 3, 6, 7, 10, 11] Furthermore, problems of fluid retention noted occasionally on administration of methyldopa[2, 7, 12] were obviated. Dollery and Harington[2] used methyldopa alone in doses up to 4.0 Gm. daily. Seven of 59 patients failed to respond. Cannon et al[4] employed doses up to 8.0 Gm. per day and reported that 31 of 33 patients had a significant response. Onesti et al[10] administered up to 2.8 Gm. per day and found that 13 of 24 patients obtained a significant antihypertensive response in the erect position; when hydrochlorothiazide was added in 7 nonresponders, 6 of these obtained a significant fall in blood pressure.

Tolerance to methyldopa has been noted by other investigators. Cannon et al[4] noted that the dosage requirement of most patients increased somewhat after they were discharged from the hospital. Two of their 33 patients required discontinuation of methyldopa because of tolerance after 7 and 11 months, respectively. Dollery and Harington[2] noted that some increase in dosage was often necessary on the early outpatient visits after patients were discharged from the hospital. They also observed that a small number of their patients continued to require increasing dosages during prolonged treatment. Bayliss and Harvey-Smith[12] noted tolerance in 4 of their 20 cases so that doses of 3 Gm. or more per day were no longer effective. Daley and Evans[13] noted significant tolerance in 2 of 20 patients. Smirk[6] reported that increased doses were required to maintain the initial blood pressure falls in 6 of 14 patients. In 2 of these patients the increases were nearly 3-fold. In the present study it was found that while 3 of 10 patients manifested tolerance, requiring an average dose at 6 months that was nearly double the average dose at 6 weeks, the remaining 7 patients did not manifest tolerance after an average of 12 months of continuous treatment.

Drug reactions to methyldopa were first noted by Gillespie and co-workers.[3] They reported 2 patients who developed fever within 2 weeks after the initiation of treatment with racemic methyldopa. Discontinuance of medication was associated with cessation of fever in both patients. On readministration of the drug, fever recurred in 1 patient within 3 days. In the second patient fever did not recur with readministration, but elevations of serum alkaline phosphatase, transaminase and bilirubin levels similar to those that had been present with fever recurred within 2 days. Leonard et al[8] reported 3 patients in whom febrile reactions occurred within 3 weeks of initiation of treatment. Methyldopa was readministered to 2 of these patients with reproduction of the fever. Sheps et al[9] reported that fever occurred within 3 weeks of initiation of methyldopa in one of his patients and was associated with an elevated serum glutamic oxaloacetic transaminase level. The latter became normal 10 days after discontinuation of the drug. Retesting was not accomplished in this case. One brief note of the results of liver biopsy in another patient has been recorded.[14] The liver became normal with discontinuation of methyldopa in this patient, but it is not stated whether retesting was undertaken.

The patient with hepatic injury in the present series represents the first reported case demonstrating hepatic changes by biopsy during the acute illness and recurrence of alterations of hepatic function tests when methyldopa was readministered. Several points are, therefore, of interest. The alterations present in the biopsy specimen were consistent with a hypersensitivity reaction with spotty necrosis but were not typical of "allergic cholangiolitis" with bile stasis[15] as seen with chlorpromazine. The tests that were most useful in following the hepatic injury were the serum glutamic oxaloacetic transaminase, the cephalin flocculation test, and bromsulfalein retention. Elevation of the serum glutamic oxaloacetic transaminase level and a change in cephalin flocculation did not occur until 9 days after the start of retesting and persisted for at least 2 weeks after methyldopa was discontinued.

Review of the literature indicates that fever and alteration of hepatic function tests are infrequent complications of the use of methyldopa. No case of death or permanent alteration of hepatic function has been reported. It appears that hepatic injury induced by methyldopa requires some type of individual hypersensitivity to the drug and is reversible with discontinuation of the drug.

Most investigators have noted that methyldopa produces less orthostatic hypotension than does guanethidine. The results in the 13 cases reported above in which guanethidine and methyldopa were compared is consistent with this impression. In reviewing the literature, average supine and erect blood pressures of 62 patients treated with methyldopa alone, reported in 5 articles,[5, 10, 11, 16, 17] were 159/95 mm. Hg and 141/91 mm. Hg, respectively. Average supine and erect blood pressures of 62 patients who were treated with guanethidine alone, reported in 5 different articles,[18-22] were 169/103 mm. Hg and 134/90 mm. Hg, respectively. Tests for statistical significance were not attempted for obvious reasons, but the finding of lower supine pressures with methyldopa when orthostatic diastolic pressures were equivalent tends to substantiate a widely held clinical impression.

In spite of the higher incidence of side-effects while taking guanethidine, patients continued to take their medications and none requested a resumption of methyldopa. Many patients preferred the small number of tablets and once daily administration associated with guanethidine. The shorter onset and effective duration of action of methyldopa were occasionally found to constitute a practical advantage. Initiation of effective therapy can be more rapid, and orthostatic hypotension, if it occurs, can be eliminated more rapidly through a reduction in dosage.

Methyldopa was not compared with drug regimens generally used for less severe hypertension in this clinic, namely, reserpine plus saluretic agents or reserpine, saluretic agents and small doses of hydralazine. The low incidence of side-effects, lack of orthostatic hypotension, simpler titration of dosages, and equivalent frequency of administration (3 or 4 times daily with hydralazine) would seem to contradict replacement of these regimens with methyldopa as the first choice of treatment in most patients with benign hypertension.

Summary

Twenty-four male patients with moderate to severe hypertension were treated with methyldopa for an average period of 9 months (range 2.5 to 22 months). The mean daily dose was 1,390 mg., usually in conjunction with a saluretic agent. Sixteen of the 24 patients maintained a significant reduction of blood pressure. Tolerance was observed in 3 cases. The side-effects were minimal and consisted principally of drowsiness during the initial period of treatment.

Two instances of febrile reactions associated with disturbances in liver function tests were observed. Abnormalities of liver function recurred when methyldopa was reinstituted. In 1 of these patients needle biopsy taken during the acute illness demonstrated toxic injury to liver cells compatible with drug-induced hepatitis.

Methyldopa was compared with guanethidine in 13 patients. Treatment with methyldopa was associated with fewer side-effects than with guanethidine but was not preferred by most patients, largely because of the large number of tablets and greater frequency of dosage required. Orthostatic reduction of blood pressure usually was greater with guanethidine.

Methyldopa, in the form of Aldomet®, was supplied by Dr. E. L. Foltz of Merck, Sharp and Dohme. We wish to thank Drs. Jay N. Cohn, William C. Heath, Myron H. Luria, Flavio D. Sassen and Harold D. Schnaper who participated in the clinic management of the above reported patients.

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Chemotherapy of Coronary Artery Disease: A Double-blind Crossover Study of PETN and Pentrium*

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MUCH RECENT LITERATURE on angina pectoris and related myocardial disease has been devoted to the emotional aspect of these disorders. This emphasis is often justified; certainly angina pectoris is the prototype of an ailment of which anxiety-tension is an integral component. The precise mechanism by which emotional stress precipitates or exacerbates angina is not known. However, heightened cholesterol levels, possible liberation of epinephrine and other catecholamines into the bloodstream, and consequent stimulation of the sympathetic nervous system may account for increases in metabolism, heart rate, blood pressure, etc.[1–6]

The concept that in coronary artery disease there exists a more or less vicious interplay of ischemia-chest pain-panic has stimulated the use of psychotropic drugs in the management of angina pectoris and coronary insufficiency. The clinical results have on the whole been satisfactory if these drugs are used adjunctively to, though not as substitutes for the standard vasodilators.

The recent tendency to downgrade the efficacy of nitroglycerine (NTG) has been serious enough to stimulate a reëvaluation of this time-honored agent.[7] A controlled study with the use of Master's 2-step test showed the significantly superior protective role of NTG over placebo. Not only are NTG and the newer vasodilators such as PETN and Peritrate® indispensable for reducing myocardial ischemia and the resulting chest pain, but their prophylactic value can hardly be overestimated.

Since the vasodilators and the psychotropic drugs, even when used separately, have proved their value in coronary artery disease, the obvious next step has been to investigate their effects in combination, which has proved superior to either class of drugs used alone.[8, 9]

In setting up our own study, PETN was chosen as the control, and a new combination, Pentrium†, as the test preparation. Pentrium combines in each capsule 20 mg. of PETN and 5 mg. of chlordiazepoxide (Librium†). The rationale behind this choice was the possibility that 4 capsules a day of Pentrium should provide the patient an effective protection against ischemia and the chronic anxiety present in most cardiac patients without oversedation or more serious toxic effects.

Pharmacologic studies of chlordiazepoxide showed a depressive influence on the limbic system of cats.[10] The drug blocked cardiac arrhythmias induced by electric stimulation of certain areas of the limbic system. In other experiments[11] this compound exerted a protective influence in rats subjected to acute trauma severe enough to prove lethal to 60 per cent of the controls. This protective action was believed to involve a reduction of the central and/or autonomic nervous system responses to a stress situation, since "the direct effects of chlordiazepoxide upon the myocardium and the associated vascular system appeared to be of a transitory antiadrenergic nature."

Clinical use of chlordiazepoxide in a variety of cardiac disorders has demonstrated the protective action against emotional stress observed in pharmacologic trials. This compound appears to greatly reduce the anxiety and fears characteristic of coronary artery disease.[12–15]

Materials and Methods

The investigation was set up as a double-blind crossover study, in which each patient took PETN for 3 weeks, immediately followed by

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[*] A combination of pentaerythritol tetranitrate and chlordiazepoxide.

[†] Product of Hoffmann-LaRoche, Inc., Nutley 10, New Jersey.

Pentrium for 3 weeks, or vice versa. Neither the investigator nor the patient knew which drug was taken first and which second, the coded information having been kept under seal until the end of the study.

The series consisted of 20 men and 15 women ranging in age from 29 to 80 years. All were having frequent attacks of angina pectoris. In 16 patients the diagnosis was coronary insufficiency; 12 patients had angina pectoris alone, and in 7 others angina followed a myocardial infarct. The remaining 6 had various diagnoses (table 1).

TABLE 1: Overall Clinical Evaluation of Pentrium, by Diagnostic Categories in 41 Double-Blind Tests

DIAGNOSIS	Excellent	Good	Fair	Poor	No Evaluation	TOTAL
Coronary insufficiency	7	4	3	2		16
Angina pectoris, alone	2	5	2	1	2	12
Angina pectoris following a myocardial infarct	3	2	2			7
Hypertensive heart disease	1				1	2
Arteriosclerotic heart disease with congestive failure		2				2
Calcific aortic stenosis with angina pectoris following myocardial infarct				1		1
Heart disease, etiology unknown			1			1
TOTAL	13	13	8	4	3	41
	63.4%					

Twenty of the group were under treatment in an outpatient clinic, and 15 were private patients. The study was confined to individuals who were having virtually daily attacks of angina and who were willing to coöperate in the study by observing and reporting the effects of the 2 drugs on their symptoms. Several of them kept notes during this study. Five private patients, whom the investigator considered highly intelligent and accurate observers and who were aware of the purpose of the study and able to coöperate to a maximal degree, repeated the test. Four of them continued the study for 12 weeks, and 1 woman, a former medical secretary who was an especially good observer, took 3 consecutive courses over a period of 18 weeks. Thus a total of 41 6-week tests were made by the 35 subjects.

In a few patients the symptoms were of a few months' duration, but the majority had suffered anginal attacks for years; many had been hospitalized for various cardiac crises. Several patients had received no previous medication for chest pain, while those with chronic conditions had taken a variety of vasodilators (PETN and Peritrate chiefly) or antihypertensives, often supplemented by psychotropic agents such as chlorpromazine or meprobamate. When the study began all but 15 patients were on nitroglycerine (NTG). Depending on the frequency and severity of anginal attacks, the pretest requirement for NTG varied from 1 or 2 tablets a week to 5 tablets a day.

The medications under test were prepared in identical-appearing capsules. One set contained 20 mg. of PETN, the other Pentrium, containing 20 mg. of PETN and 5 mg. of chlordiazepoxide. In all cases the medication was taken q.i.d. Each patient received a 6-week supply of capsules, numbered 1 to 6. He took those numbered 1, 2, 3 for the first 3 weeks and those numbered 4, 5, 6 for the second 3 weeks. The order in which the drug was taken was randomized, and the code identifying this sequence was kept unbroken until evaluations by the patients and the investigator had been put on record.

In their weekly appraisals of drug effects, the patients reported frequency and severity of chest pain, influence on fatigue and dyspnea when these symptoms were present, the amount of NTG required, and side-effects experienced. The investigator's overall evaluation was based on these subjective reports and on a clinical estimate of the patient's condition as ascertained in weekly visits to the office or clinic.

Laboratory tests, chiefly complete blood-cell count and SGOT, were done in 22 patients before the study and at its conclusion. Electrocardiograms were also taken when indicated.

Results

The overall clinical evaluation of Pentrium as compared with PETN in 41 tests is shown in table 1, which breaks down the series by diagnostic categories. Good or excellent effects of Pentrium were observed in 26 tests (63.4 per cent), fair results in 8 tests, and poor in 4 tests. No evaluation was attempted in 3 cases, in which the drug effect was not clear because of the patient's attitude or other imponderable factors.

The subjective appraisal of the 2 agents by the patients was close to that made by the investigator. Twenty-five of the 41 tests favored Pentrium over PETN; 15 reported no difference, and 1 favored PETN over the combination.

The case report forms included spaces to be filled out by checking the degree of pain experienced each week—severe, moderate, slight, or none. Similar spaces were provided for fatigue and dyspnea, which were symptoms in a few patients. Tables 2 and 3, compiled from a tabulation of the 41 case reports, show a significant contrast between the 2 drugs. The pretest levels of pain in 35 patients were severe in 9, moderate in 21, and slight in 5. No patient was free from pain before the study. During the treatment period 3 patients experienced no pain whatever while on PETN, while 12 patients were free from pain the entire time they were on Pentrium.

TABLE 2: Intensity of Chest Pain Before and During Test

Pretest Levels in 35 Patients		Total No. Weeks Reported	
		PETN	Pentrium
Severe	9	16	3
Moderate	21	29	13
Slight	5	43	33
None	0	36 (29%)	73 (59.8%)

Since 1 drug was taken immediately after 3 weeks on the other, there were carry-over effects which characterized both agents but which tended to cancel each other out and did not tip the scale toward either drug.

TABLE 3: Comparative Effects of Agents on Chest Pain

Total No. Weeks Reported		Same as Before	Worse than Before	Better than Before
PETN	124	34	16	74 (59%)
Pentrium	122	17	1	104 (85.2%)
	246	51	17	178

The drug effects on pain were tabulated by weeks, making a total of 246 weeks (41 tests each covering 6 weeks). In the degree of pain experienced, patients on PETN reported severe pain for 16 weeks as against 3 weeks for 1 patient on Pentrium; and so on down to 36 painless weeks for PETN (29 per cent) as against 73 painless weeks for Pentrium (59.8 per cent). The second part of table 2 compares the pain experienced under the 2 agents with the degree of pretreatment pain, as same, worse, or better. On PETN improvement occurred during 59 per cent of the weeks as against 85 per cent of the weeks on Pentrium.

Figure 1 is a graphic presentation of the reports on pain in 3 patients making repeat trials. In all 3 the patients while on PETN tended to show no change over the pretest level of pain, or else experienced an increase of pain, while on the combination 18 of 21 weeks were painless and 3 were at the pretest level. The statistical significance between the drugs was $P < .01$ for the 2 patients making 1 repeat trial and $P < .005$ for the patient who made 3 trials.

The patients' need for nitroglycerine (NTG) before and during the study is summarized in table 4. Recourse to NTG may be considered an index to patient anxiety as much as to the severity of pain experienced during an attack. Fifteen patients were not on NTG before the study and took none during the trials. In the 20 other patients (26 tests) NTG intake was reduced during 61 Pentrium weeks as compared with 44 PETN weeks.

TABLE 4: Nitroglycerine Requirements During Study

Pretreatment dosage range: 1 or 2 tablets a week to 5 tablets a day (15 patients were not on NTG before study and took none during study)

Compared to Pretreatment Dose Patient Required:	PETN Weeks	Pentrium Weeks
More	13	3
Same	21	12
Less	44 (22 none)	61 (49 none)

Effects on dyspnea in 5 patients showed no difference between the agents, but the reduction of fatigue, reported by 21 patients, was moderately greater on Pentrium.

Side-effects from Pentrium were reported by 3 patients. Two women reported drowsiness and "slowing down," in 1 case accompanied by nausea. This patient refused to take the last week's dosage. Skin rash developed in the youngest patient of the series, a minister aged 29, after the first week on Pentrium, but after the rash faded the drug was continued with no ill-effects. A woman aged 46 years with coronary insufficiency was hospitalized for 2 days during her second week on PETN when she developed severe ischemia and hyperventilation. When switched to Pentrium she reported feeling much better but became worse again after she finished the trial.

The laboratory reports showed no trace of toxicities, and no hypotension was observed in any patient during the study.

Discussion

Although evaluation of any drug or drug combination in the cardiac patient is notoriously difficult, the results of the present investigation indicated that the vasodilator used, PETN, reduced chest pain and the need for NTG when used alone but was significantly more effective when combined with chlordiazepoxide. In the management of coronary artery disease a distinct possibility is opening up for cumulative amelioration of the disorder, but only to the degree that the physician understands his patients and the drugs he uses more fully than at present. In some angina patients the emotional component may need more study and more adjusting of dosage than in other patients. Although NTG has been used for nearly a century we are still not certain how it acts in the body (and upon the emotions as well), and the newer drugs are more complex, subtle, and imperfectly understood.

Since we must use chemotherapy largely on a pragmatic basis, we are fortunate to have agents with a high safety index as regards liver damage and blood dyscrasias and which tend to minimize the harmful spiraling of somatic-emotional reactions.

As Master[16] reminds us, the last 30 years have seen our entire approach to angina much improved by the use of NTG as a prophylactic rather than as a measure in extremis and by the adoption of such supportive modalities as sedatives. With him we can hope that in another 30 years "enzymes, hormones and other perhaps as yet unidentified biochemical agents will make angina pectoris a truly rare condition."

DEGREE OF PAIN
3 - SEVERE
2 - MODERATE
1 - SLIGHT
0 - NONE

P = Petn
L = Pentrium

Pre-test level		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
2	3											P	P						P	PATIENT O
	2	P	P	P													P			
	1								L											·<01
	0				L	L	L	L		L	P			L	L	L		P		P<.005
2	3	P						P	P	P										PATIENT S
	2		P	P		L														
	1																			
	0				L		L				L	L	L							P<.01
1	3																			PATIENT T
	2							P	P	P										
	1	P	P	P							L									
	0				L	L	L					L	L							P<.01

WEEKS OF OBSERVATION

Significance levels based on 2x2 χ^2 contingency against one-sided alternative.

FIG. 1. Effect on pain by PETN and Pentrium.

Summary

In 41 6-week trials in 35 patients with coronary artery disease PETN and a combination of PETN with chlordiazepoxide (Pentrium) were used in a double-blind crossover study. Each patient received 80 mg./day of PETN, and for the 3 weeks on Pentrium the same amount of PETN plus 20 mg./day of chlordiazepoxide. The effects on pain and on the need for nitroglycerine were significantly better on Pentrium, confirmed by statistical analysis.

In 26 of the 41 trials (63.4 per cent) the overall clinical evaluation of Pentrium was good to excellent. Chest pain was reduced to zero in 36 treatment weeks on PETN as against 73 weeks on Pentrium, and 85 per cent of the treatment

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PRESIDENT'S PAGE

TO OUR MEMBERS—I ASK YOUR ASSISTANCE

A new President of any organization begins his administration with a deep sense of obligation to his fellow members, a profound feeling of responsibility, and a sincere desire that at the end of his term of office the organization will be fulfilling its role even better than before. This is a particularly difficult goal for me because of the dedication of my immediate predecessor.

During the past year I have been privileged to observe the work of our Society at close range. I am convinced that the Medical Society already is doing a very good job in behalf of its members, for the profession generally, and, above all, for the patients we serve. This is a tribute to my predecessors, to past and current officers, to the Board, to many committee chairmen and members, and, particularly, the executive staff. These men and women have given many hours of dedicated effort to Medical Society activities and to professional and civic obligations, such as service in medical schools, the Polio Campaign, preparations for our own new building, and our recent Scientific Assembly. To each of these people who have given so much we are deeply grateful.

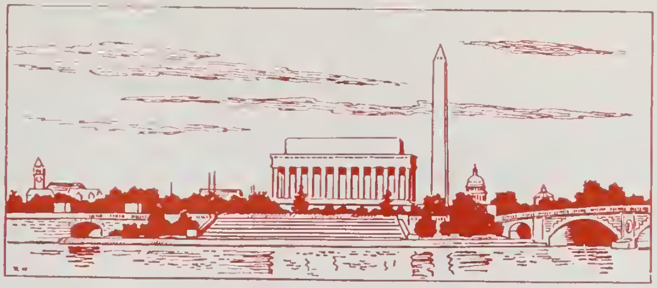
But the Medical Society is an important organization; it truly warrants active support by its members. Local medical societies, dedicated to furthering our ability to serve our patients, have long been recognized as the keystone of organized medicine. They have the responsibility of maintaining respect for the medical profession throughout the communities that comprise our Nation and, for us, particularly, the Nation's Capital.

In this effort the doctor-patient relationship has an important role. In medicine as in everything else, the whole is but the sum of its parts. The manner in which a physician diagnoses ills and treats patients is not carried on in a vacuum. Treating patients today involves public health and hospital regulations, insurance plans, medicolegal issues, voluntary health agencies, and many other social and economic issues related to our exploding populace. In these matters a vital Medical Society plays a necessary coördinating role.

For our patients to receive the best possible medical care and for physicians to practice their profession to the best of their abilities, an active and alert Medical Society is essential. The Medical Society can best meet its responsibilities if it has the active coöperation and assistance of each member.

Paul R. Wilner

PAUL ROBERT WILNER, M.D.
President, The Medical Society of the District of Columbia, 1965



EDITORIALS

Paul Robert Wilner, M.D.

Dr. Paul R. Wilner, the 98th President of the Medical Society of the District of Columbia, like his predecessors, has a deep interest in both community activities and organized medicine. An internist, he has served on many Society committees, most recently as Chairman of the Committee on Public Information and Education. He was elected First Vice President in 1954 and to the Board of Credentials in the fall of 1959, serving as Chairman in 1961.

Dr. Wilner, a native Washingtonian, was born November 4, 1911. His parents were Joseph A. Wilner, Washington civic leader, and Ida B. Wilner.

Paul Wilner graduated from Central High School, where he was a member of the football and track teams and Brigade Adjutant of the Washington High School Cadet Corps. At the University of Pennsylvania he was on the La Crosse team and served as a class officer. His brother, Morton H. Wilner, an attorney, gained fame in athletics at the same high school and University.

For his medical education Dr. Wilner chose Georgetown University. After graduating in 1936, he interned for a year and spent a second year in internal medicine at the Albert Einstein Medical Center in Philadelphia. He began the private practice of medicine in Washington in 1938, and continued his training by teaching at Georgetown.

For 4 years, 1941 to 1945, he served in the U. S. Army and was discharged as a Lieutenant Colonel. He was Chief of Medicine in the Seventh Station Hospital in England, Africa and Italy for 30 months. He also served with the Office of Strategic Services and received a commendation from Major General William J. (Wild Bill) Donovan.

Dr. Wilner is Clinical Professor of Medicine at Georgetown and Senior Attending in medicine at the Washington Hospital Center, and has served both institutions in many other capacities. He was Attending Consultant at Mt. Alto Veterans Hospital from 1947 to 1951.

In addition to membership in the American Medical Association and the D. C. Medical Society, he is a diplomate of the American Board of Internal Medicine, a Fellow of the American College of Physicians, and a member of the American Psychosomatic Society and the American Medical Writers' Association. A member of the Georgetown Clinical Society and the Jacobi Society, he served as President of the latter in 1951. He has contributed over a dozen scientific articles to the medical literature.

He is affiliated with the fraternal societies, Alpha Omega Alpha, honor medical society, and Phi Sigma Delta, and belongs to the Woodmont Club. He is a member of the Washington Hebrew Congregation, where he has served on the Board from 1957 to 1960.

Dr. and Mrs. Wilner, the former Amy E. Klawans, also of Washington, have 3 children, John at Georgetown Law School, Margaret at the University of Pennsylvania, and Richard at the Pennington Preparatory School. Mrs. Wilner, who prepares textbooks in Braille for blind children, is a well known and accomplished teacher of Braille.

The Medical Society begins this new year in capable hands. During the past year Dr. Wilner has oriented himself in the work of the Society by faithful attendance at meetings of the Executive Board, of which he was an ex officio member, and at numerous meetings of its committees.

A Fresh Look at Health Care of the Aged

The best available signs point to an early assumption by the Federal Government of more responsibility in providing health care for our senior citizens. Happily, we may anticipate that the wise leaders in Congress who are especially responsible for devising the needed legislation will be able to strip from the emotionally frozen positions at both extremes of this issue the few points that can properly be included in the consensus needed for a workable law.

To their lasting credit the leaders of the District Medical Society and the active membership who have defined their position by proper democratic procedure have for many years supported, relatively quietly but firmly, an affirmative role in this area of proposed legislation by men of medicine, recognizing a need and being anxious to help devise the method to meet it.

The Federal Employee Health Benefits Act has been the most significant factor in leading to our conclusions about ways to reach a good, workable relation with Government which can preserve the most important of our freedoms and give Government its most beneficial role in relation to all citizens.

Those of us who lived close to the making of history during the legislative development of the Federal Employee Program can never forget the outstanding lessons so applicable today.

In the early days the Administration sought to provide a limited Major Medical program, with very large deductibles, to be fully paid for by the Government for all Federal employees. This offer attracted strong support on the grounds that any program was better than none and without regard for the effects of expansion in such an ill-conceived offering. After a long and bitter struggle this effort was defeated and we were vindicated.

Two important points gained understanding. First, it became apparent that for Government to give outright a cheap program did not lower the cost of health care but indeed might even inflate it by leaving so many units of care uncontrolled outside the program. Today the Federal Employee Program is so broad that the Government contribution to it meets less than one third of the total cost but with resultant strengthening of the voluntary system and advantage to every Federal employee. In addition, it is possible for benefit structures to broaden even with mounting costs for service and yet maintain a predictable dollar outlay by Government. Second, it became accepted that maximum free choice was a prerequisite to comfortable dealing with the providers of health care. In the Federal Employee Program, by far the largest of all prepayment programs, free choice is present in greater degree than anywhere else in health insurance.

In addition to free choice and shared, even graded, assistance in financing by Government of a broad program, perhaps the handling of the retiree problem is the outstanding lesson to be learned from the Federal Employee Program. Here is the guarantee of a program for every Federal employee at retirement to have a broad scope of benefits for life at the favorable rates of working employees, and using the same doctors and hospitals as all other citizens, and with the relatively small Government contribution nevertheless acting to assure the availability of the program with high standards.

These are among the factors which have influenced the District Medical Society to call attention to the Federal Employee Program as being the best single source of guidance for some of the urgent steps about to be taken. All of our members can be proud of the understanding and realism with which they have assumed this position.

Donald Stubbs, M.D.
Blue Shield Member, Joint Contract Administrative Committee, Federal Employee Service Benefit Program

Do You Want to Be a Doctor?—A Panel Discussion

For most of you reading this, the question, "Do You Want to Be a Doctor" was answered some time ago. But think back—when did you resolve to be a doctor? If you were a young person in the Presidential Room of the Statler-Hilton Hotel on Monday, November 16, you might answer "Tonight."

A distinguished panel, moderated by Dr. Calvin T. Klopp, laid out the path for the prospective medical student. The audience of over 600 students, parents and school advisers heard good advice covering all aspects of preparation in the high school, curricula in undergraduate school, timing of the Medical College Aptitude Tests, the chances of getting into medical school, and the chances of survival after entering. In addition such questions as finances, marriage while in school, and length of training times were explored.

The ultimate success of this panel discussion will be measured years from now—measured by the work of the students who resolved that night to be a doctor. However, the enthusiasm of the audience, the questions from the floor, and the articulate panelists combined to make this program a memorable one.

Besides Dr. Klopp, the panelists, in order of their presentations, were Miss Elizabeth C. Morrow, Counselor, McKinley High School; Frank A. Evans, Ph.D., Chief Pre-Medical Advisor, Georgetown University; Paul Calabrisi, Ph.D., Chairman of the Committee on Admissions, George Washington University; and the Deans of the D. C. Medical Schools, Dr. John C. Rose of Georgetown, Dr. Robert S. Jason of Howard, and Dr. John Parks of George Washington.

T. A. Loosbrock
Panel Coördinator

Support Your Doctors' Symphonetta

The Doctors' Symphonetta, through the generosity of its sponsors and sustainers, has scheduled 3 future concerts: December 13, at St. Elizabeths Hospital, mid-January at the Washington Home for Incurables, and a special program in honor of our benefactors to be held in early spring.

If you are not listed below, join our group; it is easy to become a member. Twenty-five dollars or more, you are a sponsor; 5 to 20 dollars, and you become a sustainer. Send your check, made payable to "The Doctors' Symphonetta," to the Medical Society of the District of Columbia, 1718 M Street, N.W. (36).

P. S. Constantinople, M.D.
Chairman, Music Committee

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Study of Carotid Body Tumors

The coöperation of physicians is requested in the referral of patients with carotid body tumors for a study at the Clinical Center being conducted by the National Institute of Arthritis and Metabolic Diseases and the National Heart Institute. Purpose of the study is to relate histochemical evidence of catecholamine-containing cells in carotid body tissue to excretion of catecholamines and their metabolites.

Patients admitted to this study will be evaluated for definitive treatment. Upon completion of their study, patients will be returned to the care of their referring physicians who will receive a complete narrative summary and report of findings.

Physicians interested in having their patients considered for admission to this study may write or telephone George G. Glenner, M.D., Clinical Center, Room 3-N-112, National Institutes of Health, Bethesda, Maryland (20014); telephone: 656-4000, ext. 65837.

Health Dept. Notes

Radiation, Health and Safety

The D. C. Department of Public Health has greatly increased its activity and staff in radiologic health in recent months. The Department is prepared now to provide a complete review of equipment and operating techniques to all users of radiation apparatus and radioactive materials in D. C.

The radiologic health staff has surveyed radiographic and fluoroscopic equipment used by District Government agencies and by veterinarians and podiatrists in D. C. The staff has also renewed a survey of dental X-ray machines begun in 1962.

The Department's radiation specialists found that almost 80 per cent of the equipment and associated facilities failed to meet safety standards for such installations. Some equipment was functionally deficient; some operators used unsafe techniques. There were gross defects discovered in several instances.

Most faults, however, were minor in nature and required adjustment of the apparatus, some changes in user techniques or other modifications made at little cost to the user. Any deficiency, no matter how small, may result in needless exposure to operator and patient, if such conditions are not corrected.

This testing program for equipment and operation is a free professional service of the Department of Public Health to users of radiation equipment in the District. It is related to the registration of such equipment, which is required by D. C. regulation.

The Department has a staff of full-time radiation specialists who are trained and qualified to evaluate installations using radioactive materials and apparatus. Their tests are based on standards set by the National Committee on Radiation Protection and Measurements, the official body which makes such determinations.

The Department also has access to the expertise of the newly formed Radiological Health Subcommittee of the Public Health Advisory Council. This group includes 2 physicians from the D. C. Medical Society, a member of the D. C. Dental Society, a U. S. Public Health Service representative, a radiologic physicist, a nuclear engineer, and an equipment manufacturer representative. Their counsel will be especially useful as the radiation program expands.

Although radiation specialists from the Department will visit known installations in future months, those physicians in D. C. who wish to schedule an earlier visit are invited to request this from the Department.

The Department of Public Health welcomes the coöperation of physicians and radiologists who use radiographic and fluoroscopic equipment or radioactive materials in their practice. As the registration of these sources of radiation continues, the Department offers its services in testing and evaluating the sources, techniques and materials used. Our radiation specialists can advise and assist in these and other matters related to the safe, efficient use of these important aids in medicine.

Murray Grant, M.D., D.P.H.
D. C. Director of Public Health

1964 Award Winners

At the Medical Society's Annual Luncheon, held November 18 at the Hotel Statler-Hilton during the Annual Scientific Assembly, President Nicklas presided and conferred the traditional awards upon recipients nominated for special recognition this year.

The Meritorious Service Award was presented to 2 members of the Society, Dr. William B. Walsh and Dr. Peter D. Comanduras.

Dr. Comanduras, who has returned to practice in Washington after more than 5 years of service with MEDICO, accepted a plaque inscribed to him "in recognition of distinguished service to his profession and to peoples throughout the world. With the late Dr. Thomas A. Dooley, Dr. Comanduras was co-founder of MEDICO and its Secretary-General for over 5 years. In directing the task of providing volunteer physicians to MEDICO and to its companion project CARE, he has made modern medicine available to large sections of the world."

Dr. Walsh, founder and President of Project HOPE, was with the mission ship in Guinea, on the west coast of Africa, in November and the plaque was accepted for him by Dr. Paul R. Wilner. It was inscribed to Dr. Walsh "in recognition of distinguished service to his profession and to mankind far beyond the geographical limits of his own country. Through his imaginative concept of fitting and manning a medical training ship which has visited many less fortunate coun-

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tries of the world, Dr. Walsh has succeeded in making Project HOPE, which he directs, an international symbol of medical good will."

The John Benjamin Nichols Award is presented to a lay person who has made noteworthy contributions to the health of the community. Mrs. James Lawrence Houghteling, selected for the Nichols Award this year, was President of the Washington Home for Incurables, 1944–1950; President of the Visiting Nurses Association, 1954–1957, and still on its Board of Directors; member of the Executive Committee, American Red Cross, 1951–1956; and member of the Board of Trustees, D. C. Division of the American Cancer Society, 1952–1956. She was described as "a remarkably able, conscientious, outstanding leader in civic and health community endeavors."

The Community Service Award, sponsored by the A. H. Robins Company of Richmond, is awarded to a physician, chosen by the Medical Society, who has demonstrated outstanding community service. The obvious choice this year was Dr. Marvin C. Korengold, who headed the Mass Polio Immunization Program. A letter of endorsement read in part: "He has improved the doctor image by his many appearances on radio and television where he demonstrated all of the fine qualities of every physician who has ever dedicated himself to community health needs."

At the same occasion Dr. Raymond A. Osbourn, Chairman of the ASA Committee on Scientific Exhibit, presented awards to the prize-winning exhibitors. They were:

FIRST AWARD: John H. Bayly, M.D., Washington Hospital Center—"Umbilical Vein Study"

SECOND AWARD: Peter Y. Evans, M.D., James F. Delaney and Jay Wruck, Georgetown University Hospital—"Ocular Signs in Systemic Diseases"

THIRD AWARD (a): John P. Gallagher, M.D., and Charles F. Geschickter, M.D., Georgetown University Hospital—"Pilojection for Intracranial Aneurysm"

THIRD AWARD (b): Marion Mann, M.D., Richard L. Whelton, M.D., and Linwood L. Rayford, Jr., M.D., Howard University College of Medicine and Office of the Coroner, Washington, D.C.—"Alcohol and Accidents"

Three exhibits were cited for Honorable Mention. They were:

"Cryptococcosis and Histoplasmosis," John P. Utz, M.D., and Chester Emmons, M.D., of the National Institute of Allergy and Infectious Diseases

"Lymphangiography as a Therapeutic Adjunct," David M. Seitzman, M.D., and Major Fouad A. Halaby, MC, USA, Adelphi, Md.

"Dynamics of Osteomalacia," Harold M. Frost, M.D., and Boy Frame, M.D., Department of Orthopedic Surgery, Henry Ford Hospital, Detroit.

32nd Annual Scientific Assembly (*photographs on page 29*)

These photographs record some of the highlights of the meeting and the Annual Luncheon held, November 18, during the ASSEMBLY at the Hotel Statler-Hilton:

(1) The exhibit, "Umbilical Vein Study" by Dr. John H. Bayly which won First Award in the Scientific Exhibit.

(2) Dr. Marvin C. Korengold (left) accepts the Robins Community Service Award from Dr. Edward W. Nicklas, President of the D. C. Medical Society.

(3) Mrs. James Lawrence Houghteling, recipient of the John Benjamin Nichols Award, is lauded for her accomplishments by President Nicklas.

(4) Dr. Peter D. Comanduras holding in his hand the Meritorious Service Award presented to him by Dr. Nicklas.

(5) District Commissioner Walter N. Tobriner, the principal speaker at the Awards Luncheon.

(6) Dr. William B. Walsh, who was unable to be present to accept his Meritorious Service Award.

(7) Award-winners in the Scientific Exhibit (left to right): Dr. Bayly, Dr. Peter Y. Evans, Dr. Charles F. Geschickter, Dr. Marion Mann, Dr. John P. Utz, Dr. D. M. Seitzman, Dr. O. Landeros of Mexico City, who accepted the award for Drs. Frost and Frame of Detroit, and Mr. Harrison P. Hagemeyer, who made the instrument for the Gallagher-Geschickter exhibit.

See page 28 for story on award-winners.

Dr. Edward W. Nicklas, President of the D. C. Medical Society, called the Society's Annual Business Meeting to order on Sunday, November 15, 1964 at 4 p.m.

In Memoriam to Deceased Members

The President requested those present to rise and remain standing while he read the names of 35 members who had died during the past year. They are:

Austin, Theodore Roe (Active)—September 12, 1964
Bayne, Joseph B. (Life)—February 23, 1964
Berg, Carl E. (Active)—June 17, 1964
Bowler, John A. (Active)—October 27, 1964
Brady, J. Chester (Life)—January 1, 1964
Buckingham, David E. (Associate)—November 5, 1963
Bunim, Joseph J. (Associate)—July 8, 1964
Cohen, Roger S. (Associate)—December 14, 1963
Dortzbach, Karl (Active)—February 23, 1964
Ernst, John R. (Active)—December 19, 1963
Fernald, Clarence J. (Life)—April 8, 1964
Flynn, James A. (Life)—September 26, 1964
Foley, John Dyer (Active)—August 9, 1964
Grant, David N. W. (Honorary)—August 16, 1964
Grisoff, Isaac S. (Active)—November 1, 1963
Leonard, Bernard W. (Active)—April 13, 1964
Leonard, Thomas M. (Active)—July 12, 1964
Little, Cervera R. (Active)—August 14, 1964
MacCordy, J. Ramsey (Active)—July 6, 1964
Morse, Robert T. (Active)—February 18, 1964
Myers, Walter K. (Active)—September 1, 1964
Overholser, Winfred (Active)—October 7, 1964
Palank, Edward A. (Active)—July 21, 1964
Rivat, George L. (Associate)—September 1, 1964
Rom, Joseph M. (Active)—September 28, 1964
Schreiber, Frederick (Life)—June 23, 1964
Schulan, Irving (Active)—December 29, 1963
Speidel, Glen P. (Associate)—October 3, 1963
Trenis, John W. (Active)—February 26, 1964
Trible, George B. (Life)—May 4, 1964
Van Wagenen, Nan (Active)—October 28, 1964
Veal, J. Ross (Active)—October 9, 1964
Wells, Walter A. (Life)—June 10, 1964
White, Charles S., Jr. (Active)—April 11, 1964
Winik, Irving W. (Active)—October 14, 1964

Annual Reports of the Executive Board, the Board of Credentials, and the Secretary-Treasurer

These reports were published in the October issue of the Medical Annals, pages 507–12 and 529, and therefore were not read at the meeting. Most of the report of the Chairman of the Executive Board was informational; however, 4 items required action at the business meeting.

Revision of Constitution and By-laws: The Chairman called on Dr. W. Leroy Dunn, Chairman of the Committee on Constitution and By-laws, to present and review the revised Constitution, a copy of which was in the hands of each member present. Dr. Dunn stated that the revisions were mainly to eliminate duplication in the By-laws, and at his suggestion the Chapters were read and approved individually.

The principal changes in the revised Constitution are as follows:

Chapter II—Membership

1. Representatives of national voluntary health agencies and the Federal or District of Columbia government may be elected to Active membership.
2. Life membership is to be conferred upon those who have attained the age of 70 after 10 years of Active or Special membership. In the past only those who had been Active members for 40 years attained Life status.
3. Affiliate membership was eliminated.
4. Approval or disapproval of an applicant must be reported in writing to the Executive Board within 1 month after the name has been submitted to the membership instead of 2 months.

Chapter III—Meetings

1. Special meetings shall be held at the request of 50 Active, Life, or Special members.
2. One hundred voting members shall constitute a quorum. In the event of failure to obtain a quorum, business of general policy may be transacted by mail ballot.

Chapter IV—Dues and Assessments

Active members shall pay dues of $85 annually, except that recent graduates who have been in the active practice of medicine for less than 3 years shall pay for their first year $30; for their second year $40, and thereafter $85.00.

Chapter V—Officers and Their Duties

The President shall be a member ex officio of the Executive Board and all Councils and Committees.

Chapter VII—Duties of the Executive Board

Where action of the Society is necessary to determine policy for the guidance of the Executive Board, provision is made to secure such action by mail ballot in addition to regular or special meetings.

Chapter VIII—Board of Credentials

The membership on this Board was increased to 6

Active, Life and Special members, 2 of whom shall be elected each year for terms of 3 years. The Chairman and Vice Chairman shall be appointed by the Executive Board. At least 3 members shall be present and voting at each meeting of this Board.

Chapter IX—Councils and Committees

Seven Councils were created, namely, Councils on Organization and Membership, Communications and Public Service, Ethics and Professional Relations, Professional Education and Hospital Relations, Community Health Programs, Medical Care and Economics, and Specialty Sections. Each Council shall include a member of the Executive Board and the Chairman of those Committees assigned to that Council.

The members approved the new Constitution and By-laws with the exception of Chapter VI on election procedures. This Chapter was referred back to the Committee with the understanding that past election procedures would be continued until new ones had been approved.

A motion was made and carried that Dr. Dunn be thanked for the hard work he has done in revising the Constitution and By-laws.

The Chairman next asked for a vote on instructions to the AMA delegates on the matter of a rapid communication system for the AMA, utilizing the talents of Dr. Annis, and an increase of AMA dues. These resolutions were presented in detail in the report of the Executive Board, published in the October ANNALS, and the Board's recommendation was to oppose all 3. A motion to this effect was carried and the delegates were instructed to report to the AMA House of Delegates that opposition to these 3 resolutions by the membership was unanimous.

Supplemental Report of Executive Board

The Chairman called on Dr. Victor R. Alfaro to read the Supplemental Report of the Executive Board, which is published following these proceedings.

The proposed budget for 1965 (see page 37) was approved.

"Guidelines for Reviewing Public Health Department Activities" was presented (see page 36). After considerable discussion the Guidelines were approved as amended. The amendments consisted of adding chronic diseases and mental health services to the 6 basic services.

Dr. Alfaro presented the names of Drs. Alfred Brigulio, Frank S. Pellegrini, and Leonard T. Peterson to serve on the Board of Trustees of Medical Service for a period of 3 years each. A call for nominations from the floor brought 2 more names, but a ballot vote confirmed the nominations of the Board.

Dr. Josephine E. Renshaw was nominated to succeed Mr. Elwood Davis on the Board of Trustees of Group Hospitalization, Inc., to serve for 5 years. The Chairman pointed out that Dr. Howard P. Parker had resigned, but that this vacancy would be filled by the Board of Trustees of Blue Cross. However, the members voted to submit to Blue Cross the name of Dr. John W. Latimer to complete the unexpired term (1967) of Dr. Parker.

The members approved the nomination of Rear Admiral George G. Burkley, MC, USN, Physician to the President, to Honorary membership.

Election of Members

Members are elected by the Executive Board for a probationary period of 1 year and therefore at this meeting the election of 65 Active, 29 Associate, 3 Affiliate and 3 Resident-Intern members was confirmed by the Society.

Election of Officers

Dr. Dunn, Chairman of the Nominating Committee, submitted the following nominees for the elective offices of the Society:

President-elect: Robert J. Coffey
First Vice President: Darrell C. Crain
Second Vice President: Kenneth L. McCoy
Member of Executive Board for a 4-year term: Edward W. Nicklas
Members of Board of Credentials for 3-year terms: Jack Kleh and Seymour Alpert
Delegate to AMA for a 2-year term: Raymond T. Holden
Alternate Delegate to AMA for a 2-year term: Clifton R. Gruver

The Secretary was instructed to cast a unanimous ballot for all nominees.

Introduction of New Officers

The Chairman called upon the new President-elect, Dr. Coffey, to be escorted to the platform by Drs. Holden and J. Willard Camalier, Jr. Dr. Coffey stated he was "most appreciative of this signal honor" and that he would try to serve as capably as the present incumbent. The other electees were also recognized.

Dr. Paul R. Wilner, who will take office as President on January 1, was escorted to the platform by Dr. Renshaw and Dr. Z. M. Lebensohn.

Dr. Wilner said he had attended almost all the committee meetings in preparation for his office. He had also learned a lot about the organization through such projects as the Polio Campaign and said he would try to do as well as his predecessor, whose dedication and devotion to the affairs of the Society have been most exemplary.

Awards of Appreciation

Dr. Alfaro returned to the podium to present an inscribed gavel to outgoing President Dr. Nicklas in recognition of the warm affection and deep gratitude of the Society which he has served unstintedly.

Dr. Nicklas read a Certificate of Appreciation made out to Dr. Karl C. Corley, Past President of the Medical Society, for his significant contributions during his term of office in 1963. Dr. Corley was unable to be present and the Certificate was accepted for him by Dr. Vincent Wilcox of Groover, Christie and Merritt.

Other Business

The Chairman called for any other items of business. In view of the fact that there would be a strong push for a medical care program for the aged in the new Congress, the delegates to the AMA had submitted to the Board a resolution for presentation at the meeting of the AMA House of Delegates in Miami, Fla., November 29–December 2. Dr. Alfaro read the resolution, which follows:

Whereas, the policy of the American Medical Association has always been to support good medical care for all citizens; and

Whereas, the American Medical Association has always held that good freedom of choice by patient and physician is vital to good medical care; and

Whereas, the American Medical Association supports voluntary health coverage by the Blue Cross-Blue Shield Plans, the Commercial Insurance Industry, and clinic or group practice plans; and

Whereas, the American Medical Association has in the past exhibited a spirit of coöperation in bringing medical care to segments of the population through programs such as the Medical Care for Dependents of the Armed Forces, the Veterans Administration Hometown Care Program, and the Federal Employees Health Benefit Program; and

Whereas, the American Medical Association recognizes it is the right and duty of the Congress of the United States to levy taxes and raise funds for Federal purposes and to maintain the financial solvency of the Government and its programs; and

Whereas, Federal Government subsidy of some medical care programs is a current practice in the United States; and

Whereas, current legislative proposals for the medical care of the senior citizens offer only a limited hospital and/or nursing home program; and

Whereas, there exists through the successful Voluntary Health Programs of this country a mechanism for furnishing adequate coverage to those aged 65 years and over under a free choice concept; *therefore be it*

Resolved, that the American Medical Association does now request the Congress of the United States to develop forthwith a realistic Senior Citizens Health Care Program, for those persons 65 years of age and over, in coöperation with the American Medical Association, Blue Shield and Blue Cross, the Commercial Insurance Industry, Clinics or Group Practice Plans to be patterned on the successful Federal Employees Health Benefits Programs now in existence.

The resolution as read was approved unanimously.

Dr. Nicklas was commended for the *Newsletter* which made its appearance during his term of office.

There being no further business, the meeting was adjourned at 6:30 p.m. Refreshments were served in the Library and a social hour was enjoyed.

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Supplemental Report of the Chairman of the Executive Board

Most of the recommendations relating to general policy were included in my Annual Report, published in the Annals, and already acted upon at this meeting. A few additional items need to be included in this Supplemental Report and require approval at this time.

Proposed Budget for 1965 (page 37). This requires approval and is based upon acceptance of the necessary $15 increase in annual dues for Active members. Actually, the Board gave consideration to an increase to $100, still less than most urban societies because of their state plus local dues. Since this Society serves both as a State Association to carry out AMA organizational responsibilities and a local Society to serve an urban area it has a dual function. As such, we lag behind most cities in our programs, despite our representing the Nation's Capital. I feel that we should maintain our leadership among Medical Societies and request that you approve an increase of dues at this time. The Board recommends the minimum of $85. However, it is your privilege to increase the dues to $100 if this should be your wish.

Guidelines for Health Department Activities. A proposed policy for "Guidelines in Reviewing Public Health Department Activities" (see page 36) is needed because of the many medical care programs proposed by the Department of Public Health. We do not oppose needed medical care programs but your Executive Board believes they should be considered carefully in reference to the usually accepted Health Department functions or responsibilities. Your Board believes that our Health Department should be a model for other areas. We are anxious to coöperate with the Health Department in the planning and implementation of these accepted activities. We are opposed, however, to the use of public funds for programs which smack of socialized medicine and encroach on private practice.

Nominations to Medical Service of D. C. The following are the nominations of the Executive Board to the Board of Trustees of Medical Service: Dr. Alfred Brigulio, to succeed himself; Dr. Frank S. Pellegrini, to succeed himself; Dr. Leonard T. Peterson, to succeed himself, and each to serve for a 3-year period.

Nominations to Board of Trustees of Group Hospitalization, Inc. The Executive Board nominates Dr. Josephine Renshaw to succeed Mr. Elwood Davis, who was appointed to fill the unexpired term of Mr. Frank R. Jelleff (1970).

Nomination for Honorary Membership. It is my pleasure at this time to nominate Rear Admiral George G. Burkley, Chief Physician to President Lyndon B. Johnson, for Honorary membership in this Society.

I should like to take this opportunity to express my sincere appreciation to the many colleagues with whom it has been my privilege to serve in committees and on the Executive Board. The personal sacrifice which you and I have made is insignificant when weighed against the satisfaction gained from our activities and from the pleasure of accomplished tasks. Of all the activities in which I have been engaged, none has been more rewarding than serving on the House Committee. Soon a new Medical Society Building will be constructed at 2007 Eye Street, N.W., which will upgrade the working condition of our staff, improve the meeting facilities of our members, and provide room for future expansion. I am sure we will be very proud of our new building.

No one who has had an opportunity to serve in this Society for as many years as I have in committees, as delegate to the American Medical Association, as your President, and finally as a member of the Executive Board can leave this office without giving heartfelt thanks to all the members of our staff whose work goes on smoothly day after day, devotedly and efficiently. I would be thoughtless indeed if I did not now in behalf of the Board and all our members give sincere thanks to the people who have worked with us, to Ted Wiprud and Larry Zupan, who are no longer with us, and to their successors, George Cooley and Fred Trust, to Miss Eckburg for her excellent work with the Annals, and the secretarial and Medical Bureau staffs for their continuously efficient and faithful service.

In closing, I ask your indulgence to express some very personal feelings. I came to this country as a starry-eyed boy of 15, full of hope and ambition to become a physician. My fondest hopes and aspirations have been fulfilled beyond my wildest dreams. Without loving the sunny land where I was born any less, I have joined millions of other Americans born in foreign lands to serve our new country in times of war and peace. You have honored me with the highest office in this Society. For the confidence which you showed in me and the opportunity you have given me to serve, I can only say, thank you from the bottom of my heart.

Respectfully submitted,
Victor R. Alfaro, M.D.
Chairman

Guidelines for Reviewing Public Health Department Activities

The composition of the Committee on Public Health was deliberately revised this year to have representation from other Society committees which have specific interest in various aspects of public health. It was our hope to improve communications and avoid duplication whenever possible.

To guide the Committee in their consideration of Public Health Department proposals, the Executive Board has prepared the following guidelines based primarily on policies of the American Medical Association.

A Department of Public Health should be primarily concerned with 6 basic services*:

1. Maintenance of vital statistics
2. Public health education
3. Environmental sanitation and related problems
4. Operating a Public Health laboratory if private facilities are unavailable
5. Prevention and control of communicable diseases; and,
6. Hygiene of maternity, infancy, and childhood, where private services and facilities are not available or are inadequate.

That these established services are still considered primary by most Health Departments is shown by the following taken from a 1960 study by the AMA of 50 states and the District of Columbia and 130 local Health Departments.

Percentage of Operating Expenditures Spent on 6 Basic Services

Per cent	States	Urban Health Departments
Less than 60	7	3
60–69.9	11	2
70–79.9	9	6
80–89.9	15	13
90 or over	9	20
Total	51	44

This same study showed the following programs, aside from the basic 6 services, as being conducted by state Public Health Departments:

Percentage Spent on 6 Nonbasic Programs

	Per cent of Expenditure
Chronic disease	40
Hospital and medical care	34
Crippled children's services	17
Hospital planning and licensure	2
Dental health	2
Miscellaneous	5
	100

The data collected in this study indicate that the basic 6 services set forth in AMA policy still constitute the cornerstone of official Public Health agencies. On the average, state Health Departments spend $\frac{3}{4}$ of their budgets in this area; and since more of the larger state Health Departments spend less than the average, overall expenditures for the basic 6 services are $\frac{2}{3}$ of the total funds expended by state Health Departments. Among the 130 full-time city and county Health Departments included in the study, 84 per cent of expenditures are for traditional, basic 6 programs.

It is also evident that many Health Departments are active in a substantial way in areas outside of the basic 6 services. More than $\frac{1}{3}$ of the state Health Department expenditures were for activities other than the basic 6, and in some states such expenditures exceeded 40 per cent of the total budget. Expenditures by local Health Departments also varied widely. Smaller cities spent proportionately more than the larger cities for the basic 6 services. This ranged from 89 per cent for basic 6 services in areas of less than 250,000 population to 64 per cent in metropolitan areas with populations over 750,000.

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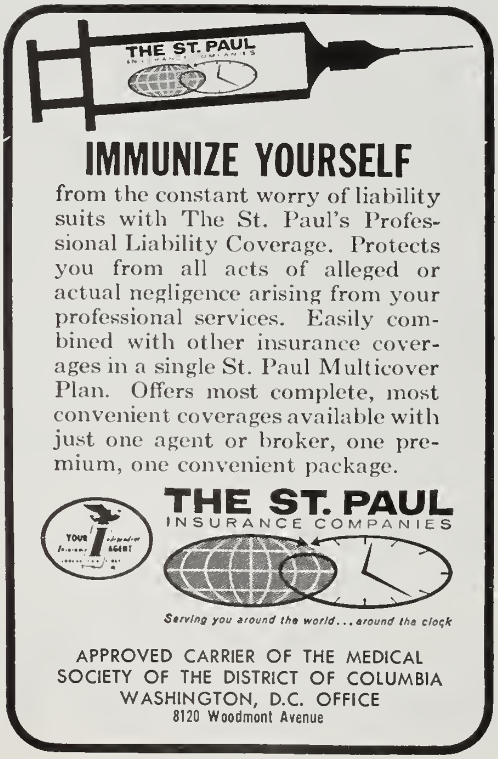
* At the Annual Business Meeting of the D. C. Medical Society, November 15, chronic diseases and mental health services were added to this list.



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It is recommended that the policy statement on Public Health services of the American Medical Association be the policy of this Society: "Public health is the art and science of maintaining, protecting, and improving the health of the people through organized community efforts. It includes those arrangements whereby the community provides medical services for special groups of persons and is concerned with prevention or control of disease, with persons requiring hospitalization to protect the community and with the medically indigent."*

The Executive Board believes that aside from programs for the indigent and medically indigent, every Public Health Department program not included in the basic 6 services should be carefully scrutinized. The District of Columbia is in need of better public health services, especially in the areas of public health education, venereal disease and tuberculosis control, environmental sanitation (air and water pollution), rodent control, inspection of restaurants and food handlers, and communicable disease control. Every dollar allocated to nonbasic programs and every person assigned to them may well detract from progress in these areas.

It is the responsibility of the Public Health Department to carry out its primary missions first and then embark on secondary functions. It is the responsibility of the Medical Society and its 1,500 Active members to assist and guide the Health Department whenever possible, always keeping in mind the need for a proper balance between Public Health programs and the private practice of medicine. Since Congress is our legislative body, such assistance and guidance may well include statements to and appearance before Congressional committees.

The Committee on Public Health should assure itself that the medical profession is adequately represented on the Public Health Advisory Council and its 6 advisory committees. It should also assure itself that the primary public health missions and services are adequately financed and staffed before agreeing to programs or projects in other areas. Of special concern should be programs of medical care in direct competition with physicians in private practice. Having done this, the Committee on Public Health, as now constituted, is in a position to assist the Director of Public Health in reviewing programs and projects and in seeking public and Congressional support for programs and projects beneficial to the District of Columbia.

Important—
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THE COLORED INSERT in this issue is a return questionnaire which can prove helpful to your Editorial Board in securing more pharmaceutical advertising for the MEDICAL ANNALS. Please fill it out at once and mail to your President, Dr. Paul R. Wilner, 1718 M Street, N.W., Washington, D.C. 20036

Proposed Budget 1965

INCOME:		
Membership Dues	$134,375.00	
Other Income:		
Annual Scientific Assembly	14,000.00	
Medical Annals Advertising	28,700.00	
Medical Bureau	139,000.00	
Rent—1710 M Street, N.W.	8,000.00	
Interest on Savings	1,500.00	
Miscellaneous	500.00	
TOTAL INCOME		$326,075.00
EXPENSES:		
Office Staffing	$70,200.00	
Office Operations	12,250.00	
Society Programs	31,200.00	
Medical Annals	44,630.00	
Medical Bureau	134,250.00	
Building Maintenance	8,550.00	
1710 M Street	9,850.00	
TOTAL EXPENSES		$310,930.00
EXCESS OF INCOME OVER EXPENSES		15,145.00
TRANSFER TO MEDICAL SOCIETY RESERVE	3,000.00	
TRANSFER TO MEDICAL BUREAU RESERVE	2,500.00	5,500.00
NET EXCESS OF INCOME OVER EXPENSES		$9,645.00

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* From the Policy Statement on Public Health in Relation to the Private Practice of Medicine, adopted by the AMA House of Delegates, November, 1962.

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The Doctor's New Dilemma

ALFRED A. J. DEX, M.D.

Chairman, Medicolegal Committee, The Medical Society of the District of Columbia

"What law exacts from me is from my will scarce gained." TERENCE: *Adelphi*

"Even that which is done rightly is just only in so far as it is voluntary." CICERO: *De Officiis*

A YOUNG DOCTOR recently challenged the traditional physician-patient relationship. He decided that it was his duty to impose a type of treatment refused by his adult, critically ill patient. He sought and obtained a judicial order for the treatment. This action and the Judge's order unloosed a deluge of comment. Questions poured forth as to the propriety of the physician's conduct and whether it infringed upon the individual's rights. A doctor, a lawyer and a judge had by-passed the precedent of "voluntary consent" and the hitherto inviolable "right to be let alone." The triumvirate had fundamentally altered the relationship of physician and patient.

The case* [1, 2] concerned an adult patient hospitalized and in critical condition from a bleeding ulcer. A member of Jehovah's Witnesses, she refused, on religious grounds, a blood transfusion deemed lifesaving by her physician.[3-6] The patient's husband concurred in her right to refuse blood. He stated that they had discussed this problem at some length prior to the indication for blood and had mutually agreed to abide by their religious restrictions. Her physician, accompanied by the Hospital's legal counsel, then went to U.S. District Court in the District of Columbia, seeking a judicial order to compel the blood transfusion. Judge Edward A. Tamm recognized the profound principle involved. He telephoned the patient's husband; the husband reiterated opposition to the doctor's recommendations; the Judge then refused the petitioner's plea on the grounds that the Court had no jurisdiction. The doctor and legal counsel thereupon proceeded to the Court of Appeals for the District of Columbia. Judge J. Skelly Wright heard the plea and interviewed the doctor and the patient, and her husband at the Hospital. He then issued an emergency writ[7] to compel the administration of the blood. The patient survived.

This problem, unprecedented in the medical and legal professions, requires detailed examination. Can the physician produce a solution? Should the long established principle of "consent" be reaffirmed by the Judicial Council of the American Medical Association,[8] or should a newly motivated code of conduct be adopted? The decision was that of a single judge and does not represent an Appeals Court decision or establish any new rule of law. It did, however, spearhead a series of similar cases elsewhere in the United States and has extended to therapeutic modalities other than the transfusion of blood. In Florida a recent case[9] entered the surgical field. A Circuit Court emergency writ was obtained to amputate a leg not only against the patient's consent but that of her daughter, the nearest of kin. The barriers, it would seem, are giving way.

The possible abuses of such a power become awesome when one ponders the possibilities of judicial intervention into the freedom of "the right to be let alone." Justice Brandeis remarked many years ago that "the greatest dangers to liberty lurk in insidious encroachment by men of zeal, well-meaning but without understanding."[10, 11] But, Daniel Webster[12] said that "liberty exists in proportion to wholesome restraint." Who is to draw the line, and where, when making judgments too controversial or hazardous for the physician to assume alone? In those cases in which the court grants the authority to act, it obviously cannot accept the responsibility for the results of the treatment ordered. Does the appeal to the judiciary exemplify a new type of physician who wishes his way to prevail regardless of the patient's obligations to conscience or religious beliefs? Can any physician be so certain of his facts as to say, "This and only this type of treatment will save your life"? Has he asked for and received the support of mature and experienced consultants? If not, he is not giving his patient the best service that medicine can offer. If he has, must the patient be compelled to choose the first type of treatment recommended?

---

* Jones v. Georgetown University Hospital, Washington, D.C.

Such attitudes vitally influence the practice of medicine. The practicing physician is well aware of his responsibility toward a child or minor, toward an incompetent person, and in the case of emergencies. When a parent rejects the necessary forms of care and treatment for a child, the state may act under the recognized doctrine of *parens patriae*. Similarly, the courts protect incompetent persons. In emergency situations the courts usually protect the doctor, if he has not been grossly negligent, assuming that the patient would consent if he were conscious and could respond at the time. These are specific and well-recognized exceptions familiar to most practicing physicians. Note, too, that the problem under discussion involved neither the public health nor safety.

The concern here is only with an adult individual of sound mind—*sui juris*. He does not have to base his objections on religious grounds or conscience. He can simply say, "I don't want this treatment." In the case cited, the Judge heard Mrs. Jones say, "Against my will." [1] Physicians have always respected the beliefs or faith of their patients. It is not their duty to challenge the validity of these tenets. When, however, they conflict with the doctor's duty to respect life, and to heal, he finds himself in a dilemma. Judge Wright said that "Mrs. Jones had no wish to be a martyr. And her religion merely prevented her consent to a transfusion. If the law undertook the responsibility of authorizing the transfusion without her consent, no problem would be raised." [1] But questions are raised.

Does this mean that the judge assumes the power to consent in order to prevent self-destruction? Does the physician have to put his patient through this process to determine the sincerity or meaningfulness of her reply? This would seem to invoke the principle that only the judge knows best what to do on behalf of a patient in certain circumstances. Is it the business of judges or courts to question the validity or sincerity of a person's religious convictions? Is it their responsibility to weigh the balance of life versus inevitable self-destruction?

Only the theologian and moralist have the competence to discuss the validity of an individual's religious convictions. The physician diagnoses and prescribes on medical grounds and is bound by conscience and ethics to practice the best available medicine for his patient. If this right is denied by the patient, is the physician's responsibility infringed? While the doctor may be caught here in a conflict involving many divergent forces, he usually acts in conformity with his patient's wishes.

Certain problems have always been present in this area, e.g., faith-healers, Christian Scientists, etc. But after explaining and stressing the necessity of a specific therapeutic measure, the doctor is generally given or denied consent. At this point in the relationship, confidence and knowledge are face to face with conscience, and each must show restraint. If the doctor cannot persuade the patient to accept his first, or possibly only recommendation, he would then have 2 choices: either to proceed as best he could with alternative proper measures acceptable to the patient or withdraw from the case.

Now the physician faces a new dilemma: Am I obliged to go to court to perform my duty fully? If not, do I risk the chance of civil or criminal liability? Judge Wright wrote, "The hospital doctors had the choice of administering the proper treatment or letting Mrs. Jones die in the hospital bed, thus exposing themselves and the hospital to the risk of civil and criminal liability in either case." [1]

The decision-making responsibility of a doctor weighs heavily on his conscience. The Oath of Hippocrates has expressed the ideal conduct of a physician since its conception during the period of Grecian greatness in the fifth century B.C. In essence, the Oath protects the rights of the patient and appeals to the inner and finer instincts of the physician, without imposing sanctions or penalties on him. The cultural, scientific and legal patterns of the twentieth century, however, are increasing the likelihood of penalties which he has not heretofore had to consider seriously. Although matters of morals and ethics are not within the specific jurisdiction of the courts, certain judicial decisions invariably set the acceptable standard. Justice Cardozo in 1914 clearly stated the legal principle that governs the relationship between doctor and patient when he said, "Every human being of adult years and sound of mind has a right to determine what shall be done with his own body, and a surgeon who performs an operation without his patient's consent commits an assault for which he is liable in damages." [13] This would seem to lay down an explicit rule of law protecting the right of the individual to give or withhold consent.

In a discussion of the fundamental patient-doctor relationship, when the patient is hospitalized the position of the hospital cannot be dismissed or overlooked. The doctor has usually considered the hospital's responsibility to the patient to be in the realm of supervising the rendition of his services to the patient and in guaranteeing the patient's safety. With notable and well-defined exceptions familiar in any ethically operated hospital, the doctor-patient relationship is not interfered with by the hospital, and the doctor and patient resolve the problem themselves. In the light of the controversy here discussed, does the hospital stand aside, or is it obligated to take some affirmative action? The position of this third party can complicate the matter. This aspect might receive more searching thought and serve as a topic for future discussion.

The unique situation here in focus has provoked searching questions, and the solutions could change a time-honored code of conduct. Remember, however, that the law has not been changed, and that customarily physicians, especially in critical or lifesaving conditions, obtain the consent of their patients for therapeutic procedures. Not to do so and to seek judicial means to compel treatment open the human arena to jeopardy.

1801 Eye Street, N.W.
Washington, D. C. 20006

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Religion, Conscience and Authority

THE REV. GEORGE M. DOCHERTY

New York Avenue Presbyterian Church

Dr. Docherty, well known for his writings and lectures, will discuss the religious and moral aspects of the problem here presented in an article to appear in the March issue of the Annals.

Medicolegal Abstracts

Physicians are reminded that in the District of Columbia the statute of limitations for filing malpractice suits runs from the date of the negligent action, and suits usually must be brought within 3 years unless there is an active fraud which tolls the running of the statute of limitations. In the case of minors the statute runs from the time of attaining their majority. The above also applies to Maryland, while in Virginia it is 2 years.

Comment: Patients' records and notes should not be thrown away before an absolute minimum of 3 years for adults and for a considerably longer period of time in the case of minors.

M-L

Several inquiries have been received as to whether a physician who renders emergency treatment pursuant to an emergency call received through the Medical Bureau would be responsible for damages in a civil action when the patient who was examined did not follow the physician's advice and go immediately to a hospital for treatment and shortly thereafter died of a heart attack.

Comment: Nothing would prevent a patient or personal representative of a patient who dies from instituting an action against the physician. This does not mean that once a civil action is filed the physician may not prevail on the merits once it is established that the patient was guilty of contributory negligence in not following the physician's instructions. Courts have held that where a patient is given specific instructions by a physician and the patient does not follow these instructions and as a result suffers damages, the patient can be barred from recovering damages on the theory that refusal or failure to follow orders constitutes contributory negligence.

M-L

Note of interest: Since 1929 only 2 malpractice suits have been won by plaintiffs in New Hampshire. The New Hampshire Medical Society credits this remarkable record to a strong and unique Medical Jurisprudence Committee.

Alfred J. Den, M.D.

Correspondence

Washington, D. C., September 29, 1964

Dr. Edward W. Nicklas
President, The Medical Society of the District of Columbia

Dear Dr. Nicklas:

It is certainly with mixed feelings that I am writing at this time to tender my resignation from the Medical Society. This is necessary, inasmuch as I will be moving to Toledo, Ohio next month to assume the position of Director of Medical Education at St. Vincent Hospital.

I have enjoyed my work with the Medical Society during the last few years and appreciate the opportunities which have been accorded me to serve on various committees. Currently, as you know, I am a member of the Cancer Control Committee and the Committee on Postgraduate Education. I regret that I will be unable to participate in the activities of these Committees during the remainder of the year.

May I take this opportunity to state my feeling that our Medical Society continues to become a more important and valuable organization in the medical community. The prospect of new and improved facilities for the conduct of Society business and other medical events is most heartening. I recognize that it is no easy task for a Medical Society to function effectively in an area having such peculiarities of geography, government and politics. The efforts which have been made and are being made to maintain the Society as an effective organization are to be commended.

Most certainly I will maintain contact with my many friends and colleagues in Washington, and, when opportunity presents, visit my 'home town.' Again, many thanks for the pleasant associations and valuable experiences which I have had, and my best wishes for the continuing success of the Society.

Sincerely,
Howard S. Madigan, M.D.
Associate Medical Director,
D. C. General Hospital

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It is of considerable importance to your Editorial Board that the following questionnaire be completed, removed from your journal, and mailed to the D.C. Medical Society offices as shown below. We urge you to take just a moment for this task, with the assurance that your effort will help us produce a better journal for you.

1. My chief professional interest is general practice ☐ or specialty ______________________________

2. I rate the scientific papers in the MEDICAL ANNALS as:
   ☐ Excellent ☐ Fair ☐ Poor

3. I read the *pharmaceutical* advertising in the Annals:
   ☐ Regularly ☐ Sometimes ☐ Rarely

4. I have referred to the *local* advertising in the Annals:
   ☐ Often ☐ Sometimes ☐ Never

5. Please give the name of *one* local service, firm or institution (professional or commercial) which you have referred to, or purchased from, as a result of seeing its advertising in the Annals:

   ____

6. Please list the professional journals you read in order of preference. (You may show your opinion of the D.C. Medical Annals by its position on this list.)

   1. ______________________
   2. ______________________
   3. ______________________
   4. ______________________
   5. ______________________
   6. ______________________

7. When examining your journal do you more often read papers by authors or from hospitals with which you are *personally* familiar than articles from other sources?
   ☐ Yes ☐ No

8. What feature do you like best in your journal? ______________________________

9. What do you like least? ______________________________

10. What is missing that you would like added? ______________________________

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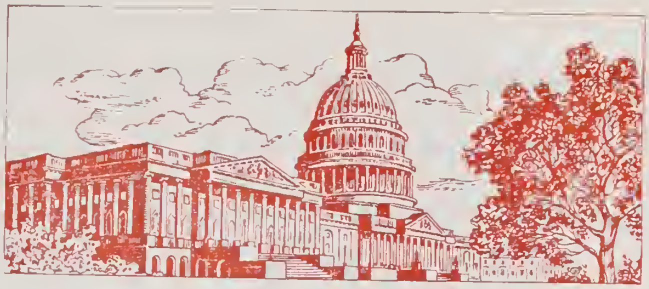

NEWS & PERSONALS

Summary of Executive Board Actions

The Executive Board of the Medical Society of the District of Columbia held its regular meeting, November 23, 1964, in the Society's building. The Chairman, Dr. Victor R. Alfaro, presided. Present were Drs. C. Willard Camalier, Jr., J. Spencer Dryden, Harold M. Hobart, Raymond T. Holden, Edward W. Nicklas, Josephine E. Renshaw, Duane C. Richtmeyer, Paul R. Wilner, and Mr. George Cooley, Secretary. The Chairman called the meeting to order at 7:30 p.m.

Committee Meetings: The Secretary reported that the following meetings had been held since the last meeting of the Board:

November	4	Conference on New Building
	5	Committee on Medical Care
	9	Liaison Committee with the Clergy
	10	Conference on New Building
	13	Board of Credentials
	15	Annual Business Meeting
	20	Committee on Cancer Control

Board of Credentials: The Executive Board approved the following recommendations of the Board of Credentials:

Active Members

Carlton Peter Alexis, Freedmen's Hospital
James Michael Bacos, Washington Hospital Center
R. Claire Cobb, 1610 New Hampshire Avenue, N.W.
Marvin H. Hird, 2121 Pennsylvania Avenue, N.W.
James Malcolm Hollister, 5410 Connecticut Avenue, N.W.
Richard Leonard Levin, Washington Hospital Center
Irwin Henley Marill, 1800 R Street, N.W.
Milton Meltzer, 5410 Connecticut Avenue, N.W.
Hardin Elling Olson, 2121 Pennsylvania Avenue, N.W.
Edward Howard Saunders, 717 Florida Avenue, N.W.
Harry Zehner, Jr., 1835 Eye Street, N.W.

Associate Members

Robert Emil Badwey, 2026 R Street, N.W.
Edward Earl Cunningham, 50 West Edmonston Drive, Rockville, Md.
Frank Joseph Weinstock, Division of Chronic Diseases, PHS, Department of Health, Education, and Welfare

Resident-Intern Member

Horace Greeley Ward, Jr., 19 42nd Street, N.E.

Transfers

Active to Associate: V. T. De Vault
Associate to Active: Gudrun M. Augustin-Rueckert

Annual Business Meeting: The resolution entitled "National Health Care Program for Senior Citizens," approved by the membership at the Annual Business Meeting, November 15, was discussed at length. The resolution will be submitted to the House of Delegates of the American Medical Association at its meeting in Miami, Florida, November 29–December 2, by Dr. Camalier. The Secretary pointed out that the Society was not in any way refusing to support the AMA in its position on Medicare, but was submitting the resolution as a realistic approach to the Senior Citizens Health Care Program. The resolution suggests a plan similar to the successful Federal Employees Health Benefits Program rather than the implementation of coverage under Social Security.

Annual Scientific Assembly: The Secretary reported that registration for the ANNUAL SCIENTIFIC ASSEMBLY was well over 1,800, and exceeded last year's attendance by about 500. The morning sessions were particularly well attended. The program on Monday evening for college undergraduates and senior high school students and their parents, which was devoted to the subject, "Do You Want to Be a Doctor?" was very well attended and the response was enthusiastic.

Emergency Medical Identification: The D. C. Life Underwriters' Association is interested in sponsoring a program to promote the use of the Medic-Alert emblem in the District of Colum-

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bia and had requested the Secretary of the Society and a physician-representative to serve on its Steering Committee. At the same time Dr. Murray Grant, District Director of Public Health, had submitted a proposal for Emergency Medical Identification for an estimated 32,000 persons in the District of Columbia. Of these, approximately 8,000 are indigent.

It was the opinion of the Board that the 2 programs should be coördinated and the same identification emblem used, the Life Underwriters making the emblem available to the general population and the Health Department to the indigent.

Kober Lecture: The Committee on the Selection of the Kober Lecturer reported that 4 physicians are being considered and the members are awaiting additional information before making a final decision.

Davidson Lecture: It was reported that the Davidson Lecture would be held on Wednesday evening, December 9, at 8:00 p.m., in the Ring Social Hall of the Washington Hebrew Congregation. The Board members expressed interest in the event, which is now an annual one, and stated that the topic, "Sex in Today's Culture—A Concern of Religion and Medicine," is a timely and important one. The guest speakers will be The Reverend Tom Faw Driver, Ph.D., Associate Professor of Christian Theology, Union Theological Seminary, New York, and James A. Knight, M.D., Associate Dean, Tulane University School of Medicine, New Orleans.

Contraceptive Advertising: The State Medical Journal Advertising Bureau had requested approval or disapproval of contraceptive advertising for publication in the MEDICAL ANNALS. In the past this advertising has been rejected, but SMJAB asked if there had been a change in policy. The Board members, after discussion, decided that such advertising be accepted providing copy is first submitted for approval.

Rapid Transit System in Washington: Dr. Margaret M. Kenrick, Director of the Department of Physical Medicine and Rehabilitation at Georgetown University School of Medicine, submitted for approval of the Executive Board a form letter to be forwarded to each Senator and Congressman concerning the development of a Rapid Transit System in Washington. The letter was submitted in behalf of a number of organizations concerned with handicapped individuals in the Washington Metropolitan Area, who number around 225,000, and requested that the Rapid Transit System, if developed, be architecturally barrier-free. The letter was approved as read, and it was requested that Dr. Kenrick be notified to this effect.

D. C. Community Mental Health Center: A report submitted by Dr. Leon Yochelson, Chairman of the Committee on Mental Health, was read. The report concerns a proposal for a Community Mental Health Center to be located at D. C. General Hospital. The Committee on Mental Health had approved in principle the proposal for the Center and similar approval had been given by the Council of the Washington Psychiatric Society and the Mental Health Committee of the Public Health Advisory Council. The Board voted to commend the Committee on Mental Health for its thorough study of this project.

The next meeting of the Board will be held, December 21, at the home of Dr. Alfaro.

There being no further business, the meeting was adjourned.

Meetings

The American Medical Association and the American Bar Association will co-sponsor the **1965 National Medicolegal Symposium,** March 11–13, at the Dunes Hotel in Las Vegas, Nevada. Some 1,200 physicians and attorneys are expected to attend. Registration fee for the Symposium is $25.00, which will cover a luncheon on Friday, a reception, and a copy of the proceedings. Advance registration cards may be obtained from Mr. Robert B. Throckmorton, General Counsel of the AMA, 535 North Dearborn Street, Chicago, Ill. (60610).

General News

Georgetown University School of Medicine has been awarded a grant of $95,368 from the John A. Hartford Foundation, Inc. for investigations in the field of shock and hemorrhage. Dr. Robert J. Coffey, Professor of Surgery, and Dr. John Dillon, Director of the Surgical Metabolic Laboratory, will conduct the study over a 3-year period. Changes in metabolism and the body fluids following bleeding and shock due to loss of blood will be investigated. The study will continue work already being done in this field at Georgetown.

Dr. Richard D. Richards, head of the Department of Ophthalmology at the University of Maryland School of Medicine, has been **appointed Associate Director of the Eye Research Foundation of Bethesda, Md.,** with which the Medical School has been affiliated since March, 1964. Dr. Richards plans to establish a training program for residents in ophthalmology at the Foundation within a few months.

The Section on General Surgery of the Medical Society of D. C. held a business meeting and election of officers, December 3. They are:

Dr. William H. Ferguson, *Chairman*; Dr. James E. Boland, *Vice Chairman*; Dr. Frank J. Sanzaro, *Secretary*; and Dr. Philip H. Philbin, *Treasurer*.

Elected to serve on the Executive Committee were Drs. Frederick Y. Donn and Jerome W. Canter.

The Section on Allergy of the Medical Society met, November 30, at the Officers' Club, Walter Reed Army Medical Center. The guest speaker was Dr. Solbert Permutt of the Department of Environmental Medicine and Public Health, Johns Hopkins University. Officers elected for 1965 were:

Dr. Stanley I. Wolf, *Chairman*; Dr. George J. Stuart, *Chairman-elect*; and Dr. Solomon E. Barr, *Secretary-Treasurer*.

Drs. Harry A. Horstman and Philip J. Tornsney were elected to the Executive Committee.

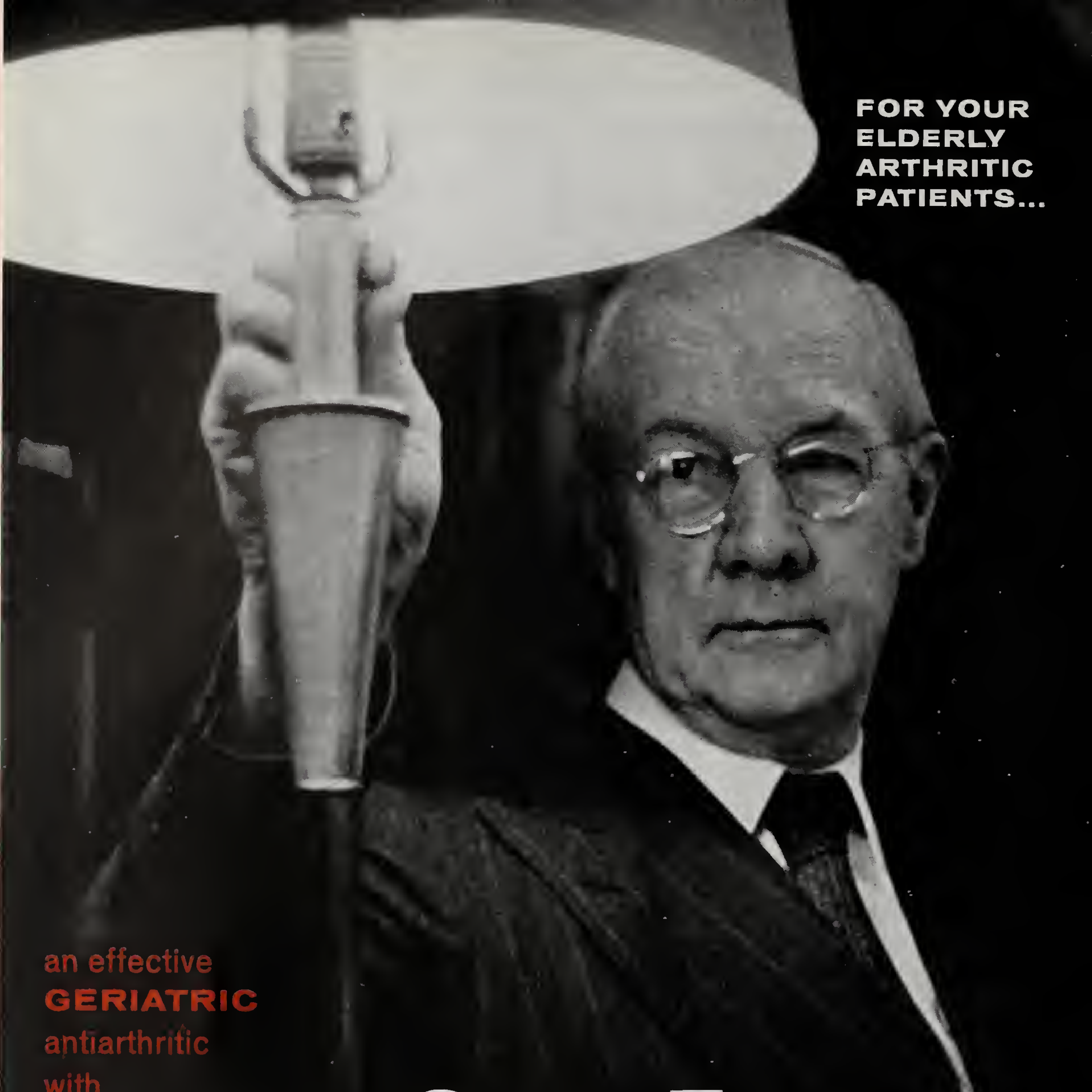
The District of Columbia Association of Medical Assistants elected new officers at its annual business meeting, November 5. They are: Mrs. Imogene Warner (Dr. Samuel Dodek), President; Mrs. Pearl Knowles (Drs. Raymond L. Schwartz and Michael A. Corrado), President-elect; Mrs. Jacqueline Blevins (Dr. Harry A. Horstman), Secretary; and Miss Gail Thornburg (Drs. Jack Kleh and Clifton R. Gruver), Treasurer. Dr. Julius Fogel was chosen adviser, to serve for 2 years.

The new officers were installed at a meeting in the Medical Society's library on December 2.

Dr. James A. Shannon, Director of the National Institutes of Health, was one of 5 outstanding Government career men who were named winners of the 1964 Rockefeller Public Service Awards, November 17. Each of the awards, presented at a luncheon, December 3, includes a $10,000 grant. As an Assistant Surgeon General, Dr. Shannon is concerned with shaping broad national research policies and coördinating PHS research activities. The program is administered by Princeton University under funds contributed by John D. Rockefeller III.

Mr. Frank Carey, science writer for the Washington Bureau of the Associated Press since 1943, has been awarded the 1964 Journalism Award by the Epilepsy Foundation. The first of its kind in this field, the award of $500 was established to help focus public attention on epilepsy. It was presented at a ceremony, December 10, at the Key Bridge Marriott Motor Hotel in Arlington, Va. The story which won the award, "Epilepsy: Hope Through Knowledge," appeared in newspapers across the Nation on June 7, 1964.

Mr. Thomas A. Hendricks, formerly Assistant to the Executive Vice President of the Ameri-



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can Medical Association, died suddenly, November 4, in Chicago.

A native of Indiana, Mr. Hendricks was Executive Director of the Indiana State Medical Association from 1924 to 1946. He joined the AMA in 1946 as Secretary of the Council on Medical Service and later was field director of the Association. He retired from the AMA in 1963. At the time of his death he was Assistant to the Executive Vice President of the Continental Casualty Company.

Personals

Dr. Allan Zellis has been named Chief Radiologist of the Alexandria Hospital, succeeding Dr. Alvin C. Wyman, who recently resigned from the position. Dr. Zellis has been associated with the Hospital for the past 11 years. A graduate of George Washington University School of Medicine, he is consultant in radiology to D. C. General Hospital and was formerly on the staffs of Mt. Alto Veterans and Sibley Memorial Hospitals.

Dr. Frederick Y. Donn has been appointed by the District Commissioners to its Public Welfare Advisory Committee on Day Care for a term expiring April 17, 1966.

Dr. Seymour Alpert, Associate Chief of the Department of Anesthesiology at George Washington University Hospital, received the 1964 Joseph Ottenstein Award of the Jewish Social Service Agency. The presentation was made at the Agency's annual meeting, November 24, at the Washington Hebrew Congregation. Established in 1961, the award recognizes a man or woman of the Washington Metropolitan Area who has demonstrated outstanding leadership in the field of social welfare. Dr. Alpert has been General Chairman of the United Jewish Appeal and was Chairman of the George Washington University Hospital Building Fund.

Dr. Oscar B. Hunter, Jr., Director of the Oscar B. Hunter Memorial Laboratory, has been elected to the Board of Lay Trustees of Trinity College, Washington, a liberal arts college for women, where 2 of his daughters are enrolled as students. Dr. Hunter is also a Director of the Trinity College Fathers Club and is Washington Area Chairman of the Development Council of the College's Board of Lay Trustees.

Dr. Daniel F. Lynch, oral surgeon and an Associate member of the D. C. Medical Society, was installed as President of the American Society of Oral Surgeons at its annual meeting in Las Vegas, Nevada, in November.

Dr. Thomas M. Wilson, of Bethesda, Md., who has served for 2 years on the Montgomery County Council and as its head, resigned the post early in November. He is an Affiliate member of the D. C. Medical Society.

The following members of the D. C. Medical Society were elected Fellows of the American College of Physicians at a meeting of the Committee on Credentials in Philadelphia, November 7: **Drs. Thomas McPherson Brown, John A. Kenney, Jr., Thomas F. McMahon, Kenneth M. Moser and Jack P. Segal.** Elected to Associate membership at the same meeting were **Drs. Irwin H. Ardam, Gilbert M. Eisner, Garo S. Matossian, Ann S. Peterson, and Vincent P. Sweeney.** All are Active members of the Society except Dr. Moser and Dr. Sweeney, who are Associate members.

Dr. Clarence C. Edwards was recently elected a Junior Fellow of the American College of Obstetricians and Gynecologists.

Obituaries

Theodore Roe Austin, A.B., M.D.

(1907–1964)

Dr. Theodore R. Austin, retired Navy pathologist, died, September 12, 1964.

Dr. Austin was born, October 11, 1907 in Carthage, Tenn., to Dr. Barnett D. Austin, a physician, and Alice Purnell Austin. He was a graduate of Vanderbilt University, receiving his A.B. degree in 1929 and his medical degree in 1932. He interned at the General Hospital in Rochester, N. Y. the following 2 years and stayed another year at the same institution as a resident in surgery.

Following his residency training he enlisted in the U. S. Navy Medical Corps to begin a naval career in medicine and surgery. Twelve years later he began postgraduate study in pathology. He was a fellow in pathology at the Mayo Clinic in Rochester from 1947 to 1949 and a resident in pathology at the U. S. Naval Hospital in Philadelphia, 1949 to 1950. He received further training at the Armed Forces Institute of Pathology from 1952 to 1956, and returned to the latter institution as a staff pathologist in 1958. He retired in 1961 with the commission of Captain.

Dr. Austin was a diplomate of the American Board of Pathology. He was a Fellow of the College of American Pathologists and a member of the International Academy of Pathology and the American Medical Association. He became an Associate member of the Medical Society of the District of Columbia in 1960 and was elected to Active membership in 1963.

He is survived by his wife, Mrs. Dorothy B. Schiele Austin, of the home address, 1610 Park Road, N.W.

Nan Poppell Van Wagenen, B.S., M.D.

(1927–1964)

Dr. Nan P. Van Wagenen, radiologist, died October 28, 1964 at the Washington Hospital Center. She lived at 2263 Sudbury Road, N.W.

Dr. Van Wagenen, daughter of Thomas J. and Nora Har Poppell, was born in Groveland, Florida, May 3, 1927. She attended the public schools of Lakeland, Fla., and received her Bachelor of Science degree from Stetson University, in Deland, in 1948. She received her degree in medicine from Temple University in 1952.

Dr. Van Wagenen interned at George Washington University Hospital the following year and was a resident in radiology at the same Hospital for 3 more years. She continued on the staff of George Washington Hospital as Associate in Radiology and was on the teaching staff of the Medical School as Clinical Instructor in Radiology. She was consultant in radiology to St. Elizabeths Hospital.

Dr. Van Wagenen was elected to Active membership in the D. C. Medical Society in 1957. She was a diplomate of the American Board of Roentgenology, a Fellow of the American College of Radiology, and a member of the American Medical Association.

Surviving her are her husband, Duryee Van Wagenen, and 3 small children, Jay, Jan and Mark. Her parents also survive her, and a brother, Dr. Jay H. Poppell, 441 Second Street, S.E.

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(*Continued from page 22*)

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February 1–3: International Symposium on Myasthenia Gravis. Waldorf-Astoria Hotel, New York. Address: Myasthenia Gravis Foundation, 2 East 103rd Street, New York, N.Y. 10029

February 10–13: American College of Radiology. Bellevue-Stratford Hotel, Philadelphia. Address: Mr. William C. Stronach, *Executive Director*, 20 North Wacker, Chicago, Ill.

February 13–17: American Academy of Allergy. Americana Hotel, Bal Harbour, Fla. Address: Mr. James O. Kelley, *Executive Secretary*, 756 North Milwaukee Street, Milwaukee, Wisc.

February 17–19: American Academy of Occupational Medicine. Columbus Plaza Hotel, Columbus, Ohio. Address: Dr. Gordon M. Hemmett, *Executive Secretary*, 343 State Street, Rochester, N. Y. 14650

February 17–21: American College of Cardiology. Statler-Hilton Hotel, Boston. Address: Dr. Philip Reichert, *Executive Director*, Empire State Building, 350 Fifth Avenue, New York, N. Y. 10001

February 25-March 2: American Dermatological Association. Boca Raton Hotel, Boca Raton, Fla. Address: Dr. Robert R. Kierland, *Executive Secretary*, Mayo Clinic, Rochester, Minn.

March 7–10: International Academy of Pathology. Philadelphia Sheraton Hotel, Philadelphia. Address: Dr. F. K. Mostofi, *Secretary-Treasurer*, Armed Forces Institute of Pathology, Washington, D. C.

March 19–21: American Society of Internal Medicine. Conrad Hilton Hotel, Chicago. Address: Mr. Albert V. Whitehall, *Executive Director*, 3410 Geary Blvd., San Francisco 18, Calif.

March 22–26: American College of Physicians. Chicago. Address: Dr. Edward C. Rosenow, Jr., *Executive Director*, 4200 Pine Street, Philadelphia 4, Pa.

March 28–April 1: International Anesthesia Research Society. Mayflower Hotel, Washington, D.C. Address: Dr. A. William Friend, Executive Secretary, 227 Wade Park Manor, Cleveland 6, Ohio

March 29–April 1: Southeastern Surgical Congress. Statler Hilton Hotel, Washington, D. C. Address: Dr. A. H. Letton, Secretary-Director, 340 Boulevard N. E., Atlanta, Ga.

June 17–21: American College of Chest Physicians. Waldorf-Astoria Hotel, New York. Address: Mr. Murray Kornfeld, *Executive Director*, 112 East Chestnut Street, Chicago, Ill. 60611

June 19: American Association for the Study of Headache. New York Hilton Hotel, New York. Address: Dr. Lester S. Blumenthal, *Chairman*, 5315 Connecticut Avenue, N. W., Washington, D. C. 20015

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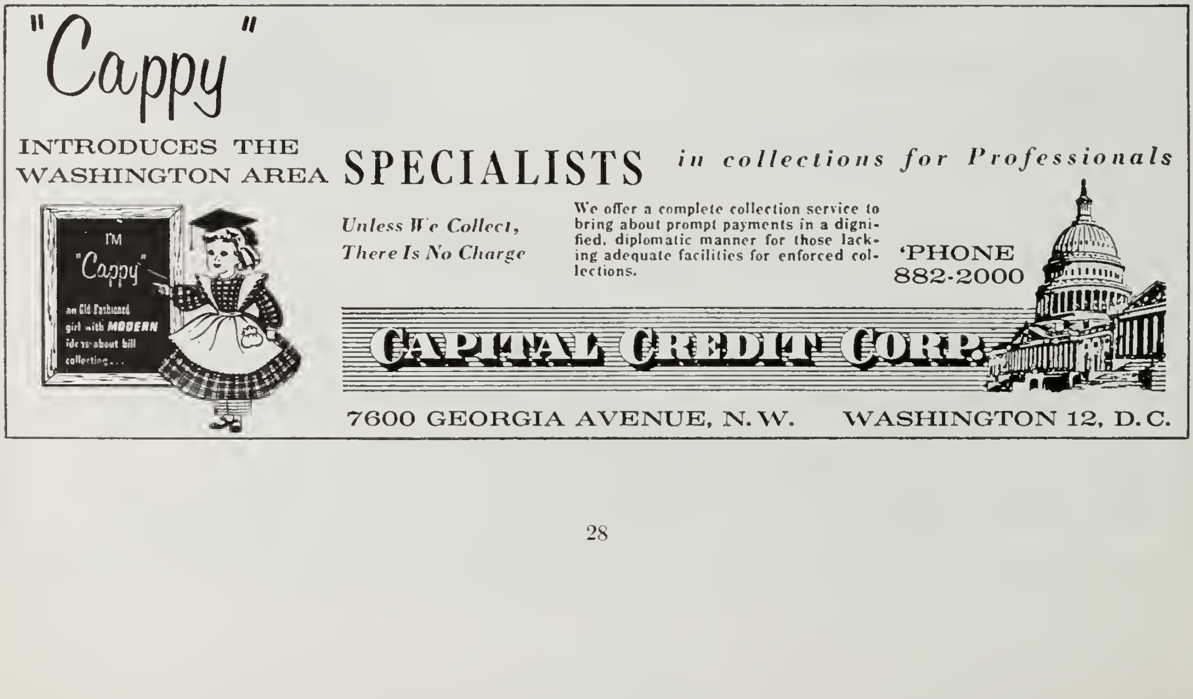
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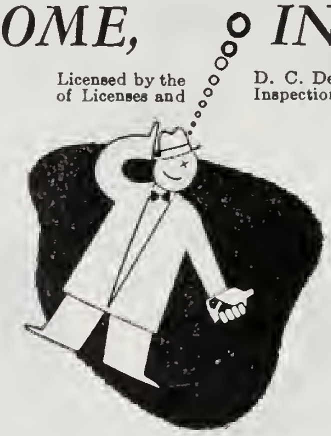

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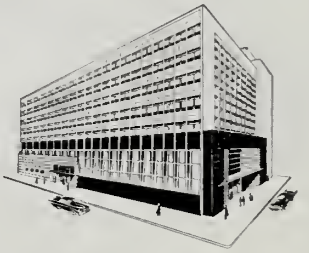

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A rhinologic approach to the sinuses
Sagittal anatomical section of nasal cavity showing approach for probing or irrigation by cannulas.

A—Sphenoid: A sphenoid cannula (under 13.5 cm.) passed around the middle and superior turbinates to the anterior wall of the sinus through its ostium.

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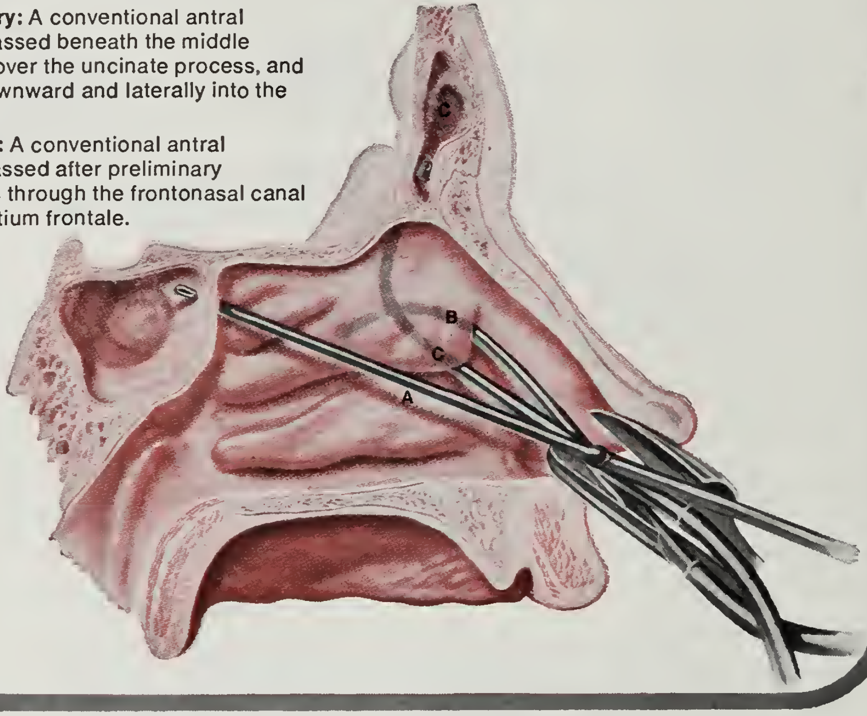

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*Reed, G. F.: Sinusitis, New England J. Med. 267:402, Aug. 23, 1962.

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*Roseman, E.: *Neurology* **11**:912, 1961. 33664

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(1) Frykman, H.M.: Minn. Med., Vol. 38, Jan. 1955. (2) Poth, E.J.: The J.A.M.A., Vol. 163, No. 15, April 13, 1957. (3) McGivney, J.: Texas State Jour. of Med., Vol. 51, No. 1, Jan. 1955. (4) Stern, F. H.: Jour. of The Amer. Ger. Soc., Vol. 11, No. 3, Mar. 1963. (5) Weekes, D. J.: N.Y. State Jour. of Med., Vol. 58, No. 16, Aug. 1958. (6) Abbott, P.L.: Jour. of Oral Surg., Anes. & Hosp. Dental Serv., Vol. 19, July 1961. (7) Weekes, D. J.: E.E.N.T. Digest, Vol. 25, No. 12, Dec. 1963.

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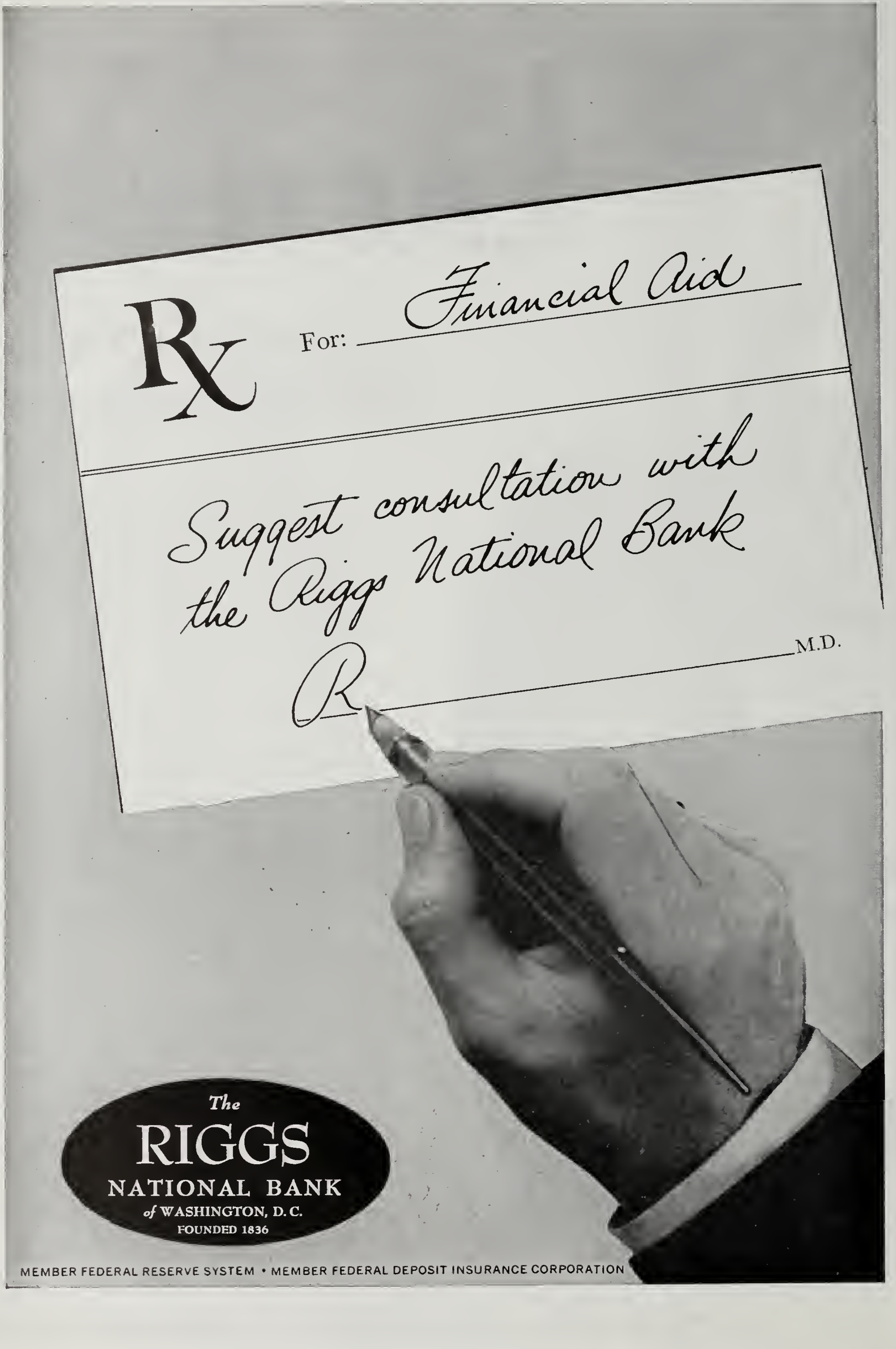

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Published monthly at
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*Chupkovich, V.; Finnerty, F. A., Jr., and Kakaviatos, N.: The value of chlorthalidone plus reserpine in moderately severe and severe hypertension: A two year study. Presented at the 7th Inter-American Congress of Cardiology, Montreal, June 14–19, 1964.

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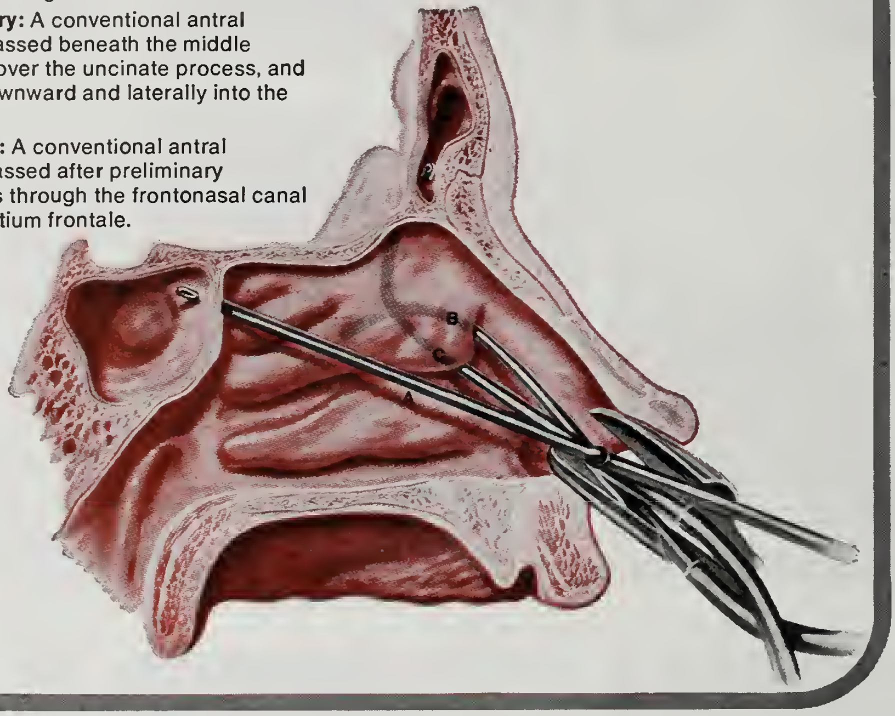

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*Reed, G. F.: Sinusitis, New England J. Med. 267:402, Aug. 23, 1962.

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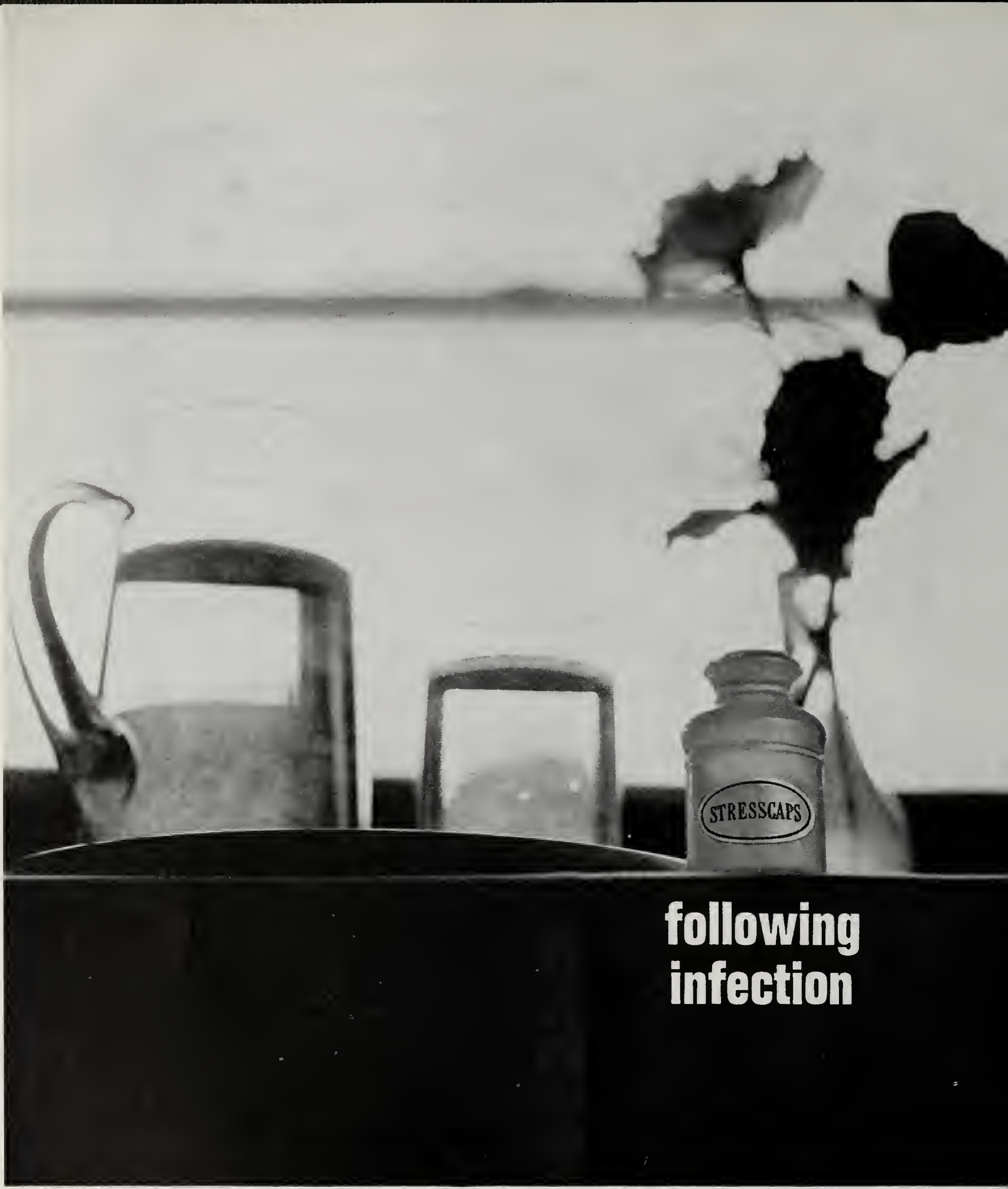

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1718 M Street, N.W. Washington, D.C. 20036

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*This one at Oak Creek, Castle Rock, Arizona

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February 1965 VOLUME XXXIV • NUMBER 2

Armed Forces Institute of Pathology Number

THIS IS THE NINTH of a third series of special numbers of the MEDICAL ANNALS, the scientific material for which is supplied by medical institutions and scientific organizations in the Washington Metropolitan Area. For the ARMED FORCES INSTITUTE OF PATHOLOGY NUMBER the Editorial Board is indebted to Brigadier General Joe M. Blumberg, MC, USA, Consulting Editor of the MEDICAL ANNALS, who secured the papers which appear in this issue.

Ocular Complications of Steroid Therapy*

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DURING THE PAST 2 DECADES a variety of corticosteroid preparations have been widely used to reduce the inflammatory response in a number of diseases, only a few of which are caused by known etiologic agents.

Complications such as aggravation of diabetes mellitus, sodium and water retention, hypertension, loss of body protein with negative nitrogen balance, osteoporosis, hypokalemic alkalosis, hirsutism, acne, amenorrhea, Cushing's syndrome, and even psychoses have occurred with systemic administration of these adrenal cortical compounds. Systemic antibiotics used either prophylactically or therapeutically have been implicated in the increased proliferation of fungi observed on the mucous membranes and the skin. Systemically administered corticosteroids have been blamed for an apparent increase in invasiveness by these fungi, many of which are not of the so-called "pathogenic types" but rather are ubiquitous saprophytes which, due to altered host resistance, have become pathogenic.

There are other purely ocular complications of corticosteroid therapy, including the formation of cataracts,[1-4] the development of chronic open-angle glaucoma,[5-13] papilledema, ptosis, and dilatation of the pupil, which are generally due to long-term therapy (topical and/or systemic) and will not be considered here.

Widespread use of corticosteroids in ophthalmology for therapeutic purposes has frequently been connected with an increased number of complications such as superimposed infections by

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* This study was supported in part by a Training Grant NB-5379 from the National Institute of Neurological Diseases and Blindness, Public Health Service, United States Department of Health, Education, and Welfare.

bacteria and fungi or activation of latent virus infections.[14-17] Corticosteroids have no anti-infective activity, but their anti-inflammatory property has been of great value in ophthalmology as in general medicine, not only as a carefully applied adjunct to the treatment of certain infectious diseases but also to control a number of purely ocular diseases believed to be of non-infectious etiology.

The purpose of this paper is to point out 2 of the more important corneal complications of the injudicious use of steroids in the management of such common conditions as "pink eye," abrasions, and foreign bodies. These are herpes simplex keratitis and mycotic keratitis.

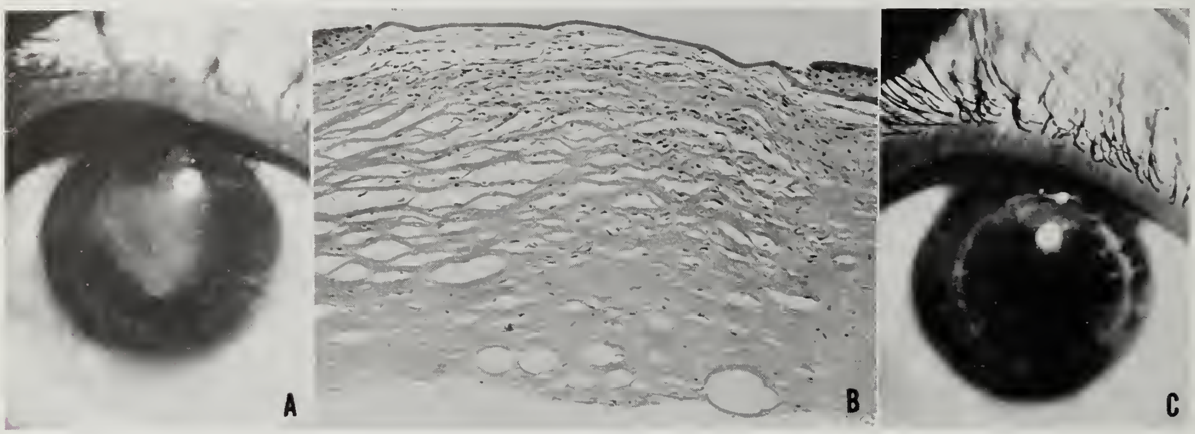

FIG. 1 (Case 1). A. Chronic dendritic keratitis led to the development of this dense vascularized scar which greatly reduced visual acuity (AFIP neg. 64-4958-2). B. Section prepared from the surgically excised central cornea revealing diffuse scarring, vascularization, and infiltration by chronic inflammatory cells (AFIP neg. 64-5254). C. Lamellar keratoplasty resulted in the substitution of clear corneal tissue for the scarred cornea and restoration of good vision (AFIP neg. 64-4958-5).

Herpes simplex keratitis (dendritic keratitis). This is an infection of the corneal epithelium caused by the same virus that is present in the common "cold sore." How it invades the corneal epithelium initially is a mystery, but some form of antecedent mild trauma is probable. The clinical symptoms in the early stages of the disease are seldom severe and may consist only of "a scratchy feeling" of 1 or 2 days' duration. In these early stages the accompanying inflammation of the eye may be quite mild and the condition may easily be mistaken for an early catarrhal (bacterial) conjunctivitis or a nonspecific "pink eye."

If left untreated this infection may resolve completely, become superinfected with other agents (e.g., bacteria or fungi), or be complicated by opacification of the corneal stroma with formation of a dense white scar which may be permanent. Such a corneal leukoma, if centrally located, may, of course, produce blindness, and replacement of this diseased corneal tissue with clear cornea from a donor eye will be necessary to restore vision.

Inappropriate treatment of such a herpes simplex infection with corticosteroids may lead to softening and rapid dissolution of the corneal layers, with perforation into the anterior chamber, prolapse of the inner contents, and loss of the eye. A less dramatic but still serious complication is the more rapid development of a corneal leukoma. The following case report is illustrative.

Case 1. A 36-year-old man with a history of a recurrent red eye was seen by an ophthalmologist after having been treated for 1 year by his general practitioner with a combination of sodium sulfacetamide and hydrocortisone. A diagnosis of corneal ulcer was made. The ulcer was cauterized twice, and after each cauterization it was treated with a combination of neomycin, polymyxin B and hydrocortisone. The vision remained blurred, and the patient was referred to another ophthalmologist. Examination revealed a markedly injected photophobic, tearing eye with vision reduced to 20/80. A dendritic ulcer was present in the central portion of the cornea together with extensive scarring and vascularization. Steroid therapy was discontinued, and the ulcer was treated by curettage and patching, after which it healed during a period of several days. When the lesion healed, a dense vascularized scar remained as shown in figure 1-A. A lamellar corneal transplantation was then carried out, by means of which the diseased tissue (figure 1-B) was replaced by clear cornea as shown in figure 1-C. The visual result was 20/20 vision.

Mycotic infections of the cornea. During the past decade there have been an increasing awareness and interest in the problem of mycotic infections of the cornea.[17-20] Although mycotic keratitis has been reported in the literature since 1879 relatively little attention has been directed to this entity during the first half of the present century. With growing interest and awareness and with the improved diagnostic methods of the past decade and a half there has been a worldwide resurgence of the number of clinical reports of this type of infection. Although it is possible that this increase in the number of published reports reflects only the increased attention being given to this entity, there are nevertheless good reasons supported by statistical data for believing that this increase is, in part, a true one. Because this increase in the reporting of keratomycosis has paralleled the introduction and widespread use of topical antibiotics and corticosteroids, it was soon appreciated that there was a cause-and-effect relationship. Whether or not there is such a direct correlation is not entirely certain, but what is clear from both the clinical and experimental evidence[21-24] is that once a fungal infection has begun it is definitely aggravated by the administration of corticosteroids. The widespread use of antibiotics which remove susceptible infecting organisms may therefore provide this fertile background for initiating fungal infections.[25, 26]

Whatever the reasons, the normal progression of a bacterial ulcer is generally more rapid than that of a fungal infection. A fungal infection generally produces a slowly progressive, white ulceration accompanied by pain which seems out of all proportion to the size of the lesion. A typical history may be that of a rather trivial injury sustained several days prior to development of the pain and redness, an injury usually sustained in the environment of vegetable matter such as twigs, thorns, dusty field crops, or grains. The administration of corticosteroids in such a situation, either alone or combined with an antibiotic, results in rapid and gratifying relief of symptoms, and temporarily both the patient and the clinician are pleased with the results of therapy. Unfortunately, the fungal infection tends to continue unabated, and eventually a turn for the worse is apparent. The following case is typical, except perhaps for the remarkably favorable outcome. Many patients have not been so fortunate![18]

Case 2. A 45-year-old white man was admitted to the Washington Hospital Center because of a corneal ulcer. Approximately 10 days earlier the patient felt as though he had a foreign body in his left eye. Five days before admission he went to a physician who treated him with antibiotics and steroids. The patient was informed that he had a corneal ulcer. Because he obtained no relief he then saw an ophthalmologist who advised admission to a hospital.

Examination revealed a large central corneal ulcer in the left eye involving about ½ of the cornea (figure 2-A). Greenish-yellow material matted the lids together. A heavy flare and cells were observed in the anterior chamber. There was no definite evidence of trauma or of a foreign body. The fundus could not be visualized, and visual acuity was reduced to counting fingers at 3 feet. Scrapings were obtained from the base of the ulcer. Direct examination of these scrapings revealed no bacteria or fungi, but cultures produced a fungus which was subsequently identified as a species of Fusarium.

Steroid therapy was discontinued. Treatment consisted of Chloromycetin® by mouth and topically (0.5 per cent), the latter being alternated with Polysporin® ophthalmic solution hourly around the clock. On the fourth day Fungizone® solution was used topically, but this caused the patient much pain and irritation. On the tenth day a small hypopyon was present and there was a streak of blood visible in the lower nasal portion of the chamber angle. Microscopic examination of the corneal button obtained after corneal transplantation revealed severe necrosis and leukocytic infiltration of the central stroma (figure 2-B). With the aid of special stains a few nonpigmented, septate, mycelial structures were identified within an area of advanced necrosis (figure 2-C).

The patient was discharged from the hospital 1 month after admission. He has been followed to date: the graft has remained clear, and there has been no evidence of recurrence of the infection (figure 2-D).

Comment

Treatment of an injury or infection to the surface of the eye by the general practitioner should be limited to the use of topical antibiotic alone, and if there is no significant improvement either subjectively or objectively in 48 to 72 hours the patient should be referred to an ophthalmologist. The most suitable therapeutic agent is 10 to 15 per cent sodium sulfacetamide given as ophthalmic drops a minimum of 5 times daily. An antibiotic or a mixture of antibiotics would be indicated if the patient has a previous history of sensitivity to sulfonamides.

If a viral or fungal ulcer is suspected and the patient has been on steroid therapy, the steroids should be discontinued immediately and the ophthalmologist should take a scraping from the ulcer for direct microscopic examination and cultures. It is important to stress the need for scrapings of the ulcer bed and edges, because in cases

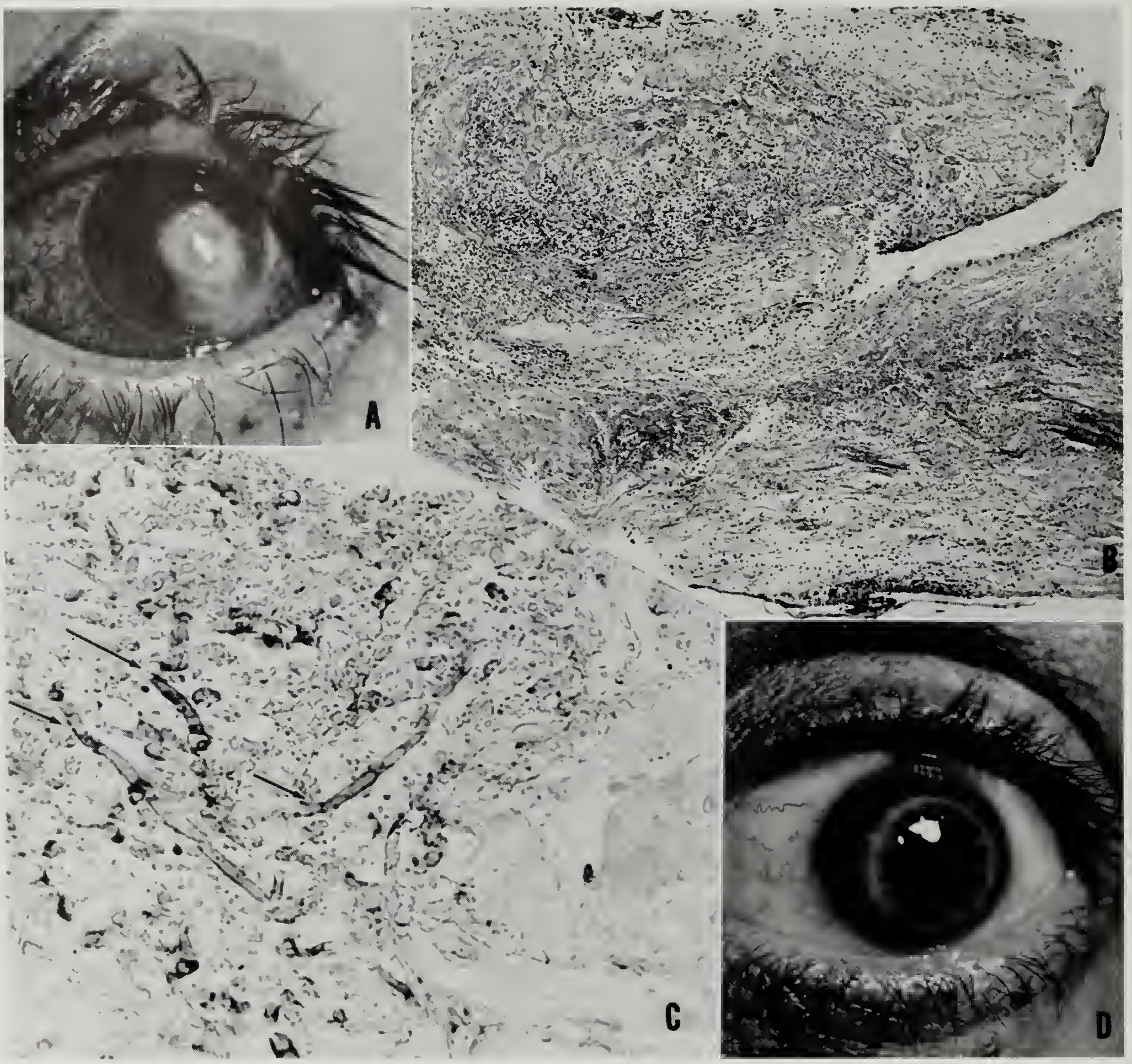

FIG. 2 (Case 2). A. Progressive ulcerative mycotic keratitis caused by a species of Fusarium. Clinical appearance of lesion about 3 weeks after onset and just prior to keratoplasty (AFIP neg. 61-1458-4). B. Section prepared from the surgically excised corneal tissue revealing extensive necrosis of the deep corneal stroma down to the level of Descemet's membrane (AFIP neg. 62-3864). C. Even though the ulcer had been vigorously treated with antifungal agents, special stains revealed persistent fungi (arrows) in the deep stromal tissues (AFIP neg. 62-3867). D. The penetrating keratoplasty resulted in the substitution of healthy, clear corneal tissue for the necrotic infected tissue shown in figures 2-A, B and C, and an excellent visual result was obtained. This picture was taken about 6 months after corneal transplantation (AFIP neg. 61-1458-3).

of keratomycosis the surface of the ulcer and the conjunctival sac are often sterile. Furthermore, scrapings may have a salutary effect because mechanical débridement of these lesions is an excellent procedure where the lesions are still quite small.[27] Results may be improved further by judicious cautery, either thermal or chemical.[28] Mycotic keratitis is notoriously difficult to treat with antifungal agents (such as nystatin or amphotericin B) because of their low antifungal activity and relatively poor penetrability into corneal tissue. The fungi that have penetrated deeply into the cornea are protected from both topical and systemic antifungal agents, and surgical removal may be necessary.[18, 29] Surgical removal in cases of active fungal infection is, at first thought, contrary to the more generally established principle that a keratoplasty is contraindicated in the presence of an active infection. This is true if the infected tissue is not removed completely. We have seen poor results in some cases in which a lamellar keratoplasty failed to remove all the infected tissue and in which the transplanted corneal tissue became infected and sloughed. It is imperative, therefore, that the diagnosis be established early, steroids eliminated, and the ulcer treated vigorously before the fungi have penetrated too widely or too deeply into the eye.

Summary

Steroids have become a most important addition to the growing list of valuable therapeutic agents that have been introduced into ophthalmology since the end of World War II. Their widespread and sometimes injudicious use, however, has led to a number of ocular complications. Cases illustrating 2 of the more serious corneal complications, dendritic keratitis and keratomycosis, have been presented.

We are pleased to acknowledge that the 2 cases cited in this paper are reported through the courtesy of Drs. J. H. King, Jr. and J. A. Kluger of the Washington Hospital Center, the surgeons who performed the successful corneal transplantations in these cases. The illustrations for case 2 are reprinted from the article on keratomycosis which appeared in *Survey of Ophthalmology*[18] with the kind permission of the publishers, the Williams & Wilkins Company of Baltimore, Maryland.

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Effect of Tetracyclines on Dentition*

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THE TETRACYCLINES comprise a group of broad-spectrum antibiotics used in the treatment of a wide variety of infections caused by both gram-positive and gram-negative bacteria, rickettsiae, spirochetes, large viruses, and certain parasites. The group includes chlortetracycline (Aureomycin®), demethylchlortetracycline (Declomycin®), oxytetracycline (Terramycin®), and tetracycline (Achromycin®, Panmycin KM®, Polycycline®, Tetracyn®).

It has been noted for some time that these drugs concentrate and persist in normal developing bone and in neoplastic bone, where their presence can be demonstrated by a golden-yellow fluorescence under ultraviolet light.[1, 2] It has also been shown that these drugs are incorporated in the dentin and enamel of teeth if they are administered during the time of tooth development.[3] The exact mechanism by which the drugs are bound to the tissues is not known, but it has been suggested that it may be due to the formation of a stable tetracycline calcium orthophosphate complex.

Within the past 2 years a number of reports have appeared in the literature describing a brown, gray, or yellow discoloration of the deciduous and permanent teeth of children with a history of tetracycline, chlortetracycline, or oxytetracycline therapy.[4-7] In some instances there were hypoplastic defects in the enamel.[4, 5, 6] The discoloration and hypoplasia were localized to the teeth or portions of the teeth that were developing during the period of drug administration. When the teeth were examined in ultraviolet light they exhibited a yellow fluorescence. In ground sections examined under fluorescence microscopy, varying numbers of golden-yellow bands were seen in the dentin, which, in general, corresponded to the number of doses of the drug administered. That the discoloration was due to the tetracyclines was demonstrated by the history, by histochemical staining, and by the fact that pigment extracted from powdered teeth showed absorption bands within the same ultraviolet spectra as tetracycline.[4]

Schwachman and his associates[8] first called attention to brown staining of the teeth of children receiving long-term tetracycline therapy. They studied 50 children who received chlortetracycline and oxytetracycline for the control of pulmonary infection associated with cystic fibrosis. Staining occurred in 80 per cent of the children and was most severe in those who received the drugs in early infancy.

Wallman and Hilton[4] also noted the high incidence of pigmented teeth among young children with a history of tetracycline therapy. They studied 50 children who received the drug for various illnesses, as well as prophylactically, usually during the first week of life. Forty-six of the children had pigmented deciduous teeth, the color varying from bright yellow to brown, according to the age of the child. In the younger children the pigmentation was bright yellow, while in the older ones it was brownish. The pigmentation involved the gingival region of the incisors, the incisor region of the cuspids, and the occlusal region of the molars. Where pigmentation was severe there was also hypoplasia of the incisal and occlusal surfaces of the teeth.

In 40 of the cases Wallman and Hilton were able to correlate the severity of the pigmentation with the gestational age, birth weight, and dose of the drugs. All the children were full-term babies and of average birth weight. The duration of treatment varied from 3½ to 6½ days. Pigmentation occurred in the children receiving an average daily dose of 26 to 29 mg. per Kg. of body weight, or an average total dose of 276 to 431 mg., and was most severe in the children receiving the highest total dose per Kg. of body weight.

To prove that the pigment was tetracycline, Wallman and Hilton examined the teeth in ultraviolet light and then compared the ultraviolet spectra of pigment extracted from the teeth with that of tetracycline. In ultraviolet light the teeth showed yellow fluorescence, both in vivo and after extraction, and pigment extracted from the teeth showed an absorption band at 270 mcg., which is one of the absorption bands of tetracycline.

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* The opinions contained in this article are those of the author and are not to be construed as official or reflecting the views of the United States Navy.

To demonstrate that the tetracycline, rather than prematurity or the disease for which the drug was given, was responsible for the pigmentation and hypoplasia, Wallman and Hilton[9] studied 46 children whose birth weight was less than 2.5 Kg., which was taken as the criterion of prematurity. Thirty-two of the children had normal teeth. Six of the 32 children had had neonatal illnesses but had not received tetracycline. Fourteen of the children had pigmented teeth, with and without enamel hypoplasia, and of these 13 had had various neonatal illnesses for which they had received tetracycline.

Wallman and Hilton, in the same study, also investigated 21 children who had been given oxytetracycline, also in the neonatal period. The average daily dose was 38 mg. per Kg. of body weight, or an average total dose of 62 mg. Only 2 of the children had abnormal teeth, and in neither instance was the drug thought to be responsible.

On the basis of their studies Wallman and Hilton concluded that tetracycline, rather than prematurity or the disease for which the drug was given, was responsible for the pigmentation and enamel hypoplasia and that oxytetracycline does not appear to affect the teeth when given in the neonatal period.

Harcourt, Johnson, and Storey[5] studied deciduous and permanent teeth from young patients known to have been treated extensively at some time with tetracyclines. The crowns of the deciduous first molar teeth were hypoplastic and bright yellow in some areas. In ground sections of the teeth examined under ultraviolet light a number of bright golden-yellow bands were present in the dentin of both the deciduous and permanent teeth and in the cementum of the permanent teeth, but the enamel was unstained. Microradiographs of the deciduous teeth showed large areas of interglobular dentin, but these areas were not associated with the yellow bands. These investigators concluded that the interglobular dentin almost certainly represented a manifestation of a systemic disease rather than an interference with calcification by tetracyclines.

Witkop and Wolf[6] reported on a series of 17 children, aged 2½ to 7 years, with hypoplastic and stained enamel associated with tetracycline therapy. Fifteen of the children had hypoplasia of the enamel of the deciduous teeth, and in 2 the permanent teeth were affected. The latter children received tetracycline at the age of 9 and 11 months, respectively, and had hypoplasia of the incisal edges of the permanent incisors and the occlusal surfaces of the first permanent molars. In addition, all the children had yellow to brown staining in the areas of hypoplasia and in the enamel immediately adjacent to the hypoplastic defects. Examination of the teeth under ultraviolet light produced a bright-yellow fluorescence, most intense at the junction of the hypoplastic and normal enamel. Information as to the exact dose was obtained in only 5 cases. In 4 the amount varied from 250 to 500 mg. per day. Based on the weight of the child at the time of therapy the doses ranged from 20 to 75 mg. per Kg. of body weight per day. Those receiving the higher doses had severe hypoplasia of the enamel.

Weyman and Porteous[7] examined 37 patients with discolored teeth who had received chlortetracycline, oxytetracycline, or tetracycline for a wide variety of conditions. In all instances it was confirmed that there was no detectable relationship between the staining and the disease. Two types of discoloration were seen. One was strong yellow and fluoresced bright gold in ultraviolet light, and the other was gray-brown and did not fluoresce. The yellow teeth erupted yellow, but the gray-brown teeth erupted slightly darker than normal and then darkened further but never appeared yellow. Except for 1 patient who had received oxytetracycline all the children with yellow teeth had received tetracycline, while all those with grayish-brown teeth had received chlortetracycline. Although clinical hypoplasia occurred, it was not believed to be related to the drug in this group of children. Ground sections of the teeth examined under ultraviolet light showed the typical yellow bands. The fluorescence was removed on decalcification, but the position of the bands could still be seen very faintly in ordinary light. With ethylenediaminetetraacetate (EDTA), however, some of the fluorescence was retained.

Report of Cases

Our interest was directed toward the effect of tetracycline on the teeth when we received the exfoliated deciduous maxillary central incisor tooth of a 5½-year-old white girl with the request that the tooth be analyzed for oxytetracycline. According to the clinical history the child had diffuse brown discoloration of all her deciduous teeth, noted when the teeth first erupted. The child had received oxytetracycline intermittently between the fifth and fifteenth months of life for recurrent attacks of bronchiolitis. The exact doses were not known, but it was stated that they were not high and had never been given for longer than 4 to 7 days at a time. Her medical history was otherwise negative.

Macroscopically, the crown of the tooth exhibited a grayish-brown discoloration that was slightly more pronounced in the cervical region but showed no hypoplastic defects. Under ultraviolet light the crown gave a bluish-white fluorescence comparable to that of a normal tooth.

Ground sections of the tooth were examined microscopically by visible, polarized, and ultraviolet light. With visible and polarized light the findings were not particularly revealing. In visible light 3, or perhaps 4, faint, brownish bands could be seen in the labial and lingual coronal dentin. The bands extended from the incisal region to the region of the cemento-enamel junction and paralleled the outer surface of the crown.

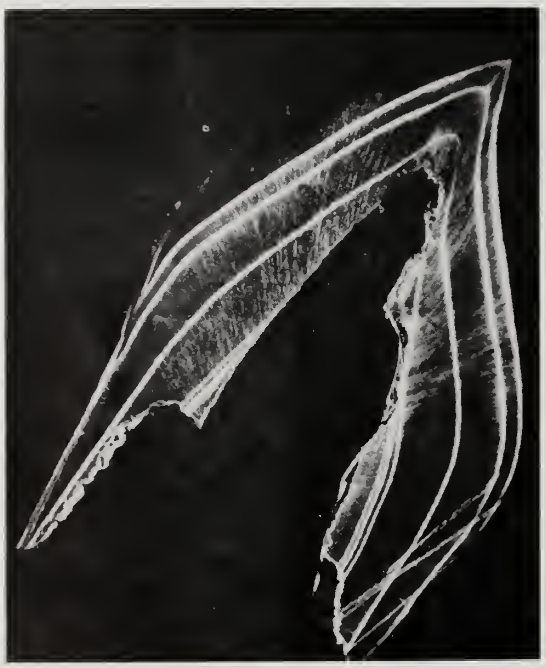

FIG. 1. Photomicrograph of ground section of deciduous maxillary central incisor taken with ultraviolet light. Six fluorescent bands can be distinguished. With ultraviolet light the bands fluoresced a brilliant yellow (AFIP neg. 64-5226).

In sections studied under ultraviolet light the findings were very striking (figure 1). Within both the labial and lingual dentin 6 bright yellow bands could be seen. Two of the bands extended from the incisal region to the region of the cemento-enamel junction, and a third extended from the incisal region into the root dentin. Near the pulpal surface of the coronal dentin, opposite the cemento-enamel junction, there were 3 narrow but very distinct bands that also extended into the root dentin. No banding was seen in the enamel.

Figure 2 is a photomicrograph taken just above the lingual cemento-enamel junction and shows 2 of the bands in greater detail. The outer band, i.e., that nearest the dentino-enamel junction, appears to be composed of 2 separate bands, while the inner consists of 3 fairly distinct bands. The dentinal tubules on the pulpal surface of the bands exhibit a faint autofluorescence. A microradiograph of the tooth showed that the bands were not associated with any disturbance in the calcification of the dentin.

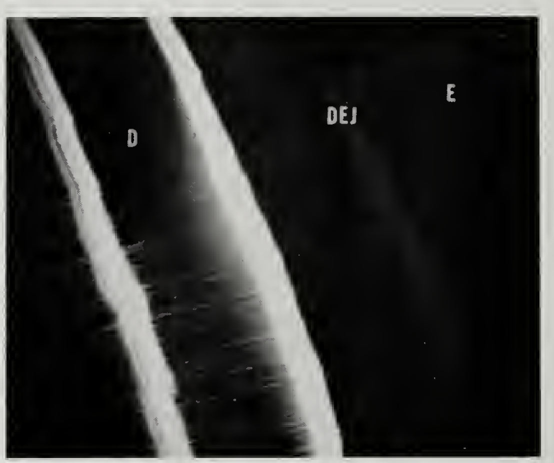

FIG. 2. Ultraviolet photomicrograph taken above lingual cemento-enamel junction of tooth shown in figure 1. E, enamel; DEJ, dentino-enamel junction; D, dentin. Note autofluorescence of dentin on pulpal side of fluorescent bands (AFIP neg. 64-5227).

Figure 3 shows a 7½-year-old boy with grayish-brown to brownish-yellow discoloration of the teeth believed to be related to tetracycline therapy. At the age of 9 months he received oxytetracycline for a paratyphoid infection. The exact amount is not known but is believed to have been about 475 mg. per day for approximately 3 weeks. At the age of 16 months, and again at the ages of 2½, 3½, 4½, 5½, and 6½ years he received tetracycline for recurrent attacks of tonsillitis. The dose for each attack was stated to be about 250 mg. per day for 5 days.

In vivo examination of the teeth with ultraviolet light revealed a brownish-yellow fluorescence involving the middle and gingival thirds of the crowns that was slightly more prominent in the maxillary dentition. The permanent mandibular central incisors and the mandibular and maxillary permanent molars had just begun to erupt but appeared normal.

The patient subsequently exfoliated the right deciduous maxillary central and lateral incisor teeth, and the lateral incisor was examined microscopically for tetracycline deposition. Under ultraviolet light the findings were similar to those shown in figure 1. Four brilliant yellow bands were seen in the labial and lingual dentin, but there was no banding in the enamel. The outermost band extended from the tip of the incisal dentin to just above the cemento-enamel junction and was particularly prominent. The 3 inner bands extended from the incisal dentin into the root dentin.

Figure 4 shows the 3 inner bands in greater detail, as well as a heavy deposit of secondary dentin within the pulp chamber, in which there is an irregular pattern of banding. The junction between the primary and secondary dentin also shows faint fluorescence.

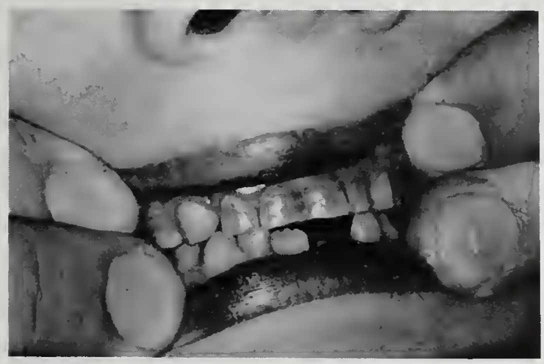

FIG. 3. Grayish-brown to brownish-yellow deciduous teeth of a 7½-year-old boy who had received a massive dose of oxytetracycline at the age of 9 months and over the next 5 years had received repeated doses of tetracycline for recurrent attacks of tonsillitis (AFIP neg. 64-5228).

Discussion

Administration of the tetracyclines, i.e., oxytetracycline, chlortetracycline, and tetracycline, during the period of tooth development may be associated with discoloration of the teeth and hypoplastic defects in the enamel. The discoloration and hypoplasia are related to the deposition of the antibiotics in the developing dentin and enamel, where their presence may be demonstrated as golden-yellow fluorescent bands in ground sections of the teeth examined under ultraviolet light. These drugs may also cross the placental barrier and affect the developing teeth. Harcourt, Johnson, and Storey[5] and Rendle-Short[10] reported cases in which children whose mothers received tetracycline during pregnancy had yellow deciduous teeth. There is as yet no relevant information about the effect of demethylchlortetracycline on the teeth, as there have been no recorded instances of discoloration or hypoplasia related to the administration of this drug.

The mechanism by which the antibiotics are incorporated in the teeth is not known, but it has been suggested that it may be due to the formation of a tetracycline calcium orthophosphate complex.[4] The fact that the antibiotics tend to concentrate in the dentin rather than in the highly mineralized enamel, however, supports the theory that a complex of ground substance, collagen, and mineral may be involved.[11] In our cases the fluorescent bands were seen only in the dentin.

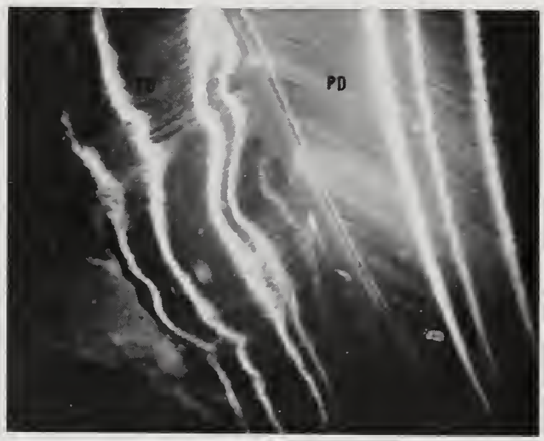

FIG. 4. Ultraviolet photomicrograph of maxillary right lateral incisor of patient shown in figure 3. SD, secondary dentin; PD, primary dentin. Three fluorescent bands are seen in the primary dentin and 4 irregular bands in the secondary dentin. Note delicate banding at junction of primary and secondary dentin (AFIP neg. 64-5229).

Whether the teeth are otherwise adversely affected, e.g., being more susceptible to caries, remains to be demonstrated. It has been shown experimentally that the incorporation of tetracycline in the teeth results in a partial inhibition of mineralization in the increments of enamel and dentin formed during the period of administration.[3] There is also experimental evidence, however, suggesting that the teeth may actually be more caries-resistant.[12]

Since the tetracyclines are the drugs of choice in many infant and childhood infections, and since in most instances the consequences of the infection far outweigh their possible effects upon the teeth, there is no reason to suggest that their

(Continued on page 74)

Basophilic Mucoid Degeneration of the Heart*

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In view of the current emphasis on and interest shown in heart disease today, it would be expected that a heart lesion with a reported incidence as high as 71 per cent in a routine autopsy series[1] would be under intensive study with all of the newest methods of investigation now available. This does not appear to be so with basophilic mucoid degeneration of the heart, and it is certainly not so because our knowledge concerning the lesion is complete. Although more than half a century has passed since it was first described in the medical literature,[2] the lesion is still occasionally misdiagnosed or misinterpreted either as a parasitic lesion or as representing early calcification of the heart. Indeed, the cause is still unknown and investigative studies have been few. I shall report some of the more recent developments concerning this lesion. It is hoped that some of the remaining problems might serve as a challenge to some investigator and stimulate further study of this lesion.

In 1905 Geipel[2] first described a peculiar form of basophilic degeneration of the muscle fibers of the heart of a 16-year-old girl who died from active rheumatic heart disease. This report was followed by that of Hewitt[3] who in 1910 described "a peculiar degeneration in the heart muscle cells" in 2 hearts. The areas of degeneration were of microscopic size and were described as "a small, round, oval or irregular pale blue area inside of a single muscle cell." Haumeder[4] later reported finding similar lesions in 107 of the 320 hearts examined by her. Since that time other reports of this lesion have appeared under various designations, such as "basophilic degeneration,"[4, 5] "mucoid degeneration,"[6] "basophilic mucoid degeneration,"[7] "basophilic (mucinous) degeneration,"[1] and "cardiac colloid."[8]

The lesion is microscopic and occurs in the cytoplasm of the muscle fiber (figure 1), and it may occur in a high percentage of hearts in a series of consecutive autopsies (71 per cent). Basophilic mucoid degeneration is not generally considered to be related to any particular disease, although reported in association with a variety of diseases, most frequently cardiovascular, cerebrovascular and renal diseases, and malignant neoplasms.[1, 4] The lesion occurs in the hearts of both sexes, and is found more frequently in individuals over 40 years of age; however, it is occasionally seen in young people, our youngest patient being 8 years of age. The number of lesions varies with each case; in some cases only an occasional lesion is present, while in others there may be many lesions. The affected fiber often appears swollen or enlarged. The nucleus is apparently not involved in this change, although occasionally it may show early degenerative

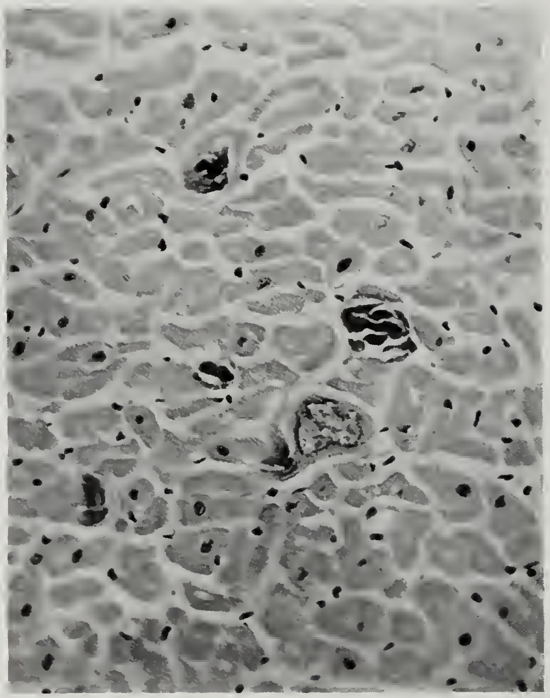

FIG. 1. Photomicrograph of a hematoxylin and eosin-stained section from the heart of a 22-year-old man who died of progressive myoclonic epilepsy, showing focal lesions of basophilic mucoid degeneration in the myofibers cut transversely. Note variation in intensity of staining from lesion to lesion and the presence of darker staining bodies within the individual lesion (AFIP neg. 60-2049).

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changes. The size and shape of the lesion vary considerably, and, depending on whether the muscle fiber is cut in its transverse or longitudinal axis, it may be an oval, round, or irregularly shaped patch within the cytoplasm of the muscle fiber. The lesion stains a blue of variable intensity with hematoxylin and eosin, and it is this property that has led to its designation as "basophilic degeneration of the heart." [4] (Variation in the intensity of the blue in a lesion stained with hematoxylin and eosin is often noted among lesions from the same section of the heart [figure 1].) When Mayer's mucicarmine stain is used the lesion stains a light red, while Best's carmine stain produces a bright red. These staining properties, indicative of both a mucin or a mucin-related substance, while also reflecting some of the properties of a glycogen, have led to the designation of "mucoid degeneration of the heart muscle." [6, 7] Scotti,[1] who studied this lesion extensively, showed that in addition to staining with hematoxylin and eosin, Mayer's mucicarmine, and Best's carmine the lesion also stained brilliantly with periodic acid-Schiff (PAS), and a PAS-positive reaction was observed even after digestion with diastase. A distinct metachromasia was observed when toluidine blue stain was followed by rapid dehydration with alcohol or acetone. The Feulgen reaction and attempts to demonstrate iron and calcium were negative. Scotti concluded from his histochemical studies that the accumulated material was a mucinous substance, probably a mucoprotein, acid mucoprotein, or acid mucopolysaccharide and was not related to desoxyribose or ribonucleic acid.

When examined under low-power magnification the lesion has a granular consistency. In some lesions vacuoles and scattered, more deeply basophilic staining granules are noted. These deeper staining granules occasionally are confused with parasites, particularly toxoplasmosis. In some instances eosinophilic strands or septa can be observed traversing the lesions; these are considered remnants of myofibrils.[1] Some lesions may be minute, appearing as small droplets separating the myofibrils, while others show almost complete replacement of the myofiber. Lesions are found in both the superficial and deep layers of the myocardium, there being no special predilection for any particular portion. The wall of the left ventricle appears to be the most frequent site of the lesion, the interventricular septum the next most frequent site, and in decreasing order of frequency the left atrium, right atrium, right ventricle, left atrial appendage, and right atrial appendage.[1, 4]

Although basophilic mucoid degeneration of the heart is not generally considered to be related to any particular disease, various authors, including Umeda,[9] LaDue,[10] Doerr,[7] Haust et al,[8] Brewer,[11] and others, have reported the lesion in association with thyroid disease. Scotti's study indicated a higher frequency of the lesion in cardiovascular, cerebrovascular, and renal diseases and malignant neoplasms; however, he pointed out that these diseases occur most frequently in the same age group as that of the highest incidence of basophilic degeneration of the myocardium. Therefore, the relationship may have no significance. He suggested, since the basophilic mucoid degeneration lesions are most frequent in the comparable age group of cardiovascular lesions, particularly coronary arteriosclerosis, an actual or relative ischemia of the myocardium might result in a metabolic disturbance of the fiber capable of producing basophilic degeneration but not severe enough to cause more serious degenerative changes or necrosis. He also thought that a relative ischemia might explain the presence of the lesion in 3 of his young patients, all of whom had hypertrophy of the heart. Doerr[7] also suggested that the lesions in the hypertrophied heart might be the result of an impaired vascular supply. Attempts were made by various authors to relate basophilic degeneration of the myocardium to certain other conditions in the heart, such as excessive lipochrome pigment, the presence of myocardial fibrosis, or hypertrophy of the heart. All were unsuccessful.[1]

In 1955 Harriman and Millar[12] introduced for the first time another interesting association. They reported the finding of basophilic mucoid degeneration of the heart in a 24-year-old man who had died from progressive familial myoclonic epilepsy. This disease, which is characterized by generalized or continuous muscle spasms and epileptic attacks, was first defined by Unverricht in 1891 and is sometimes called "Unverricht's syndrome." The disease is comparatively rare and shows a very striking pathologic change in the brain tissue—the presence of curious amyloid bodies within the cytoplasm of the nerve cells. These bodies, which were first described by Lafora and Glueck,[13] are often called "Lafora bodies." Interestingly enough, in the case of Harriman and Millar there were, in addition to the presence of Lafora bodies in the brain tissue, numerous basophilic lesions in the heart and also numerous accumulations of basophilic-staining materials in the cytoplasm of the liver cells. Histochemical studies revealed similar materials in the brain, heart, and liver, all of which were basophilic and showed metachromasia. These materials stained strongly positive with the PAS technique, gave a positive reaction to Lugol's iodine test from amyloid, and gave negative results to the PAS acetic anhydride test. The lesions were PAS-positive following acetic anhydride and KOH, hyaluronidase followed by PAS, concentrated sputum followed by PAS, diastase followed by PAS, and hot methyl alcohol and chloroform followed by PAS. The Hale technique for acid mucopolysaccharides gave positive results, as did the Fehrter enclosure method for mucopolysaccharides. The lipoid tests, including the Nile blue sulfate, Sudan III, and Sudan black B, were negative. The coupled tetrazonium method for protein was faintly positive, while the Feulgen reaction for nucleoprotein was negative. It was concluded that the material in the brain, heart, and liver belonged to the group of acid mucopolysaccharides, and this suggested that the underlying disorder of this disease could be caused by a disturbance of intracellular carbohydrate metabolism. Investigations by Harriman and Millar on other clinical cases failed to substantiate this possibility, however.

Seitelberger et al,[14] confirming the findings of Harriman and Millar, reported 3 cases of progressive myoclonic epilepsy in which Lafora bodies were present in the brain, and basophilic accumulations in the heart and liver cells. In addition, they reported for the first time the occurrence of the material beneath the epithelium of the choroid plexus. In their etiologic analysis they interpreted the disease as an expression of an enzymatic disturbance of the cellular metabolic changes involving the synthesis of glycogen and leading to the accumulation of defective polysaccharides in the main organs involved in the synthesis.

Our experience with progressive myoclonic familial epilepsy is limited to a single case, but like Harriman and Millar[12] and Seitelberger and co-workers,[14] we found lesions in the brain, heart, and liver, and our histochemical studies gave similar results. The heart lesions were numerous and very striking, as illustrated in figures 1 and 2. This case is one of the better examples of basophilic mucoid degeneration of the heart in our material.

Discussion

The diagnosis of basophilic mucoid degeneration of the heart, as has been pointed out, is a microscopic one. It is usually based on the appearance of the lesion and its basophilic properties in the routine hematoxylin and eosin reaction. Only rarely is this lesion studied with selective stains, since its frequency would impose a heavy work load on the laboratory without commensurate results. Many pathologists must have considered the possibility that all lesions in the heart that stain in this manner may not necessarily be lesions of basophilic mucoid degeneration. Certainly the slight variations encountered in the staining reaction would suggest this. Recently, on the basis of their investigations on phosphorylation of tissue components, Haust and co-workers[8] pointed out that the lesions of basophilic mucoid degeneration, which they called "cardiac colloid," may be divided into 2 types that, while having similar histochemical properties, have distinct morphologic patterns. The first type, found in hypertrophied hearts and noted in 2 of their control hearts, ". . . was present either centrally or slightly eccentrically in the muscle fiber. It occupied a space which seemed not to contain nuclear, cytoplasmic, or myo-

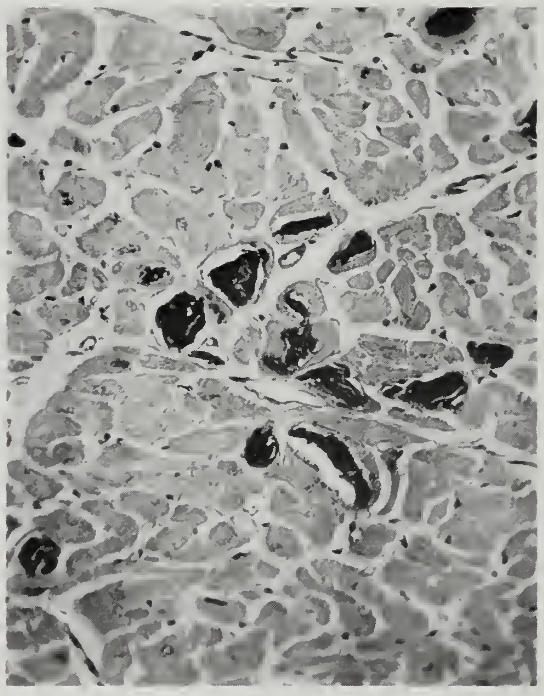

FIG. 2. Photomicrograph of a section from the heart (same case as figure 1) stained with periodic acid-Schiff with diastase digestion. Numerous PAS-positive lesions were found throughout the myocardium. In addition, PAS-positive bodies were present in the brain (Lafora bodies) and in the cytoplasm of the liver cells (AFIP neg. 60-2047).

fibrillar remnants. The deposit had a round or slightly oval shape, and was always surrounded by a rim of sarcoplasm. This rim varied in thickness from case to case and even from fiber to fiber in the same section. At times the colloid-containing space had a horseshoe shape, partially enclosing an intact nucleus. This form of cardiac colloid had a homogeneous texture, and it stained dark bluish-purple to violet when the phosphorylated section was stained with aldehyde fuchsin and bluish-purple with toluidine blue." The second type was found in patients with hypothyroidism. The staining properties in this type differed from those of the first type in that "... violet and purple tinges were absent when the phosphorylated material was stained with aldehyde fuchsin and toluidine blue respectively, the substance staining dark blackish-blue with both stains after phosphorylation. This type of colloid was not confined to intracellular spaces but could be present in any part of the muscle fiber, often reaching the cell boundary. Longitudinal sections showed that it was closely associated with myofibrils. Vacuoles were never seen in this form of colloid. The distribution within the cell was neither central nor pericentral, but rather haphazard." These findings suggested that cardiac colloid or basophilic mucoid degeneration in hypothyroid patients (Type II colloid[8]) could be differentiated morphologically from that found in hypertrophied hearts from other causes, or in elderly persons (Type I colloid[8]). The selective staining of the colloid after phosphorylation was interpreted as indicative of a high hydroxyl content, while other histochemical features suggested that both forms were mucoprotein or glycoprotein, rather than glycolipid or pure polysaccharide. The carbohydrate moiety was considered not to be glycogen and did not appear to be a pentose polymer. Haust et al could not assert that the frequent occurrence of cardiac colloid in young adults with "idiopathic cardiac hypertrophy" indicated a biochemical abnormality of the myocardium.

The reports of Harriman and Millar, Seitelberger et al and Haust et al should serve to bring about a new evaluation of basophilic mucoid degeneration of the heart. Two of the reports[12, 14] suggest that the lesions found in progressive familial myoclonic epilepsy might be the result of a disturbance of intracellular carbohydrate metabolism. Stevenson[12] in discussing the genetic aspects of progressive familial myoclonic epilepsy likewise stated that the syndrome may occur in other pathologic conditions in which recessive heredity may also play a part.

In view of the clinical history of almost continuous occurrences of muscle spasms and epileptic attacks in patients with familial myoclonic epilepsy the possibility of an actual or relative ischemia playing a role in the development of the heart lesions, as suggested by Scotti,[1] appears tenable; however, whether this explanation could be applied to the development of the brain and liver lesions is moot. Certainly further clinical and postmortem studies on this disease are necessary, and, if possible, the heart lesions, as well as the brain and liver lesions, should be studied with the phosphorylation methods described by Haust et al.[8] A further subdivision of these lesions may be possible.

Summary

The historical background, microscopic appearance, and staining reaction of basophilic mucoid degeneration of the heart have been presented here, and another instance of its occurrence in progressive myoclonic epilepsy has been reported. Some progress has been made in subdividing the lesions according to their staining properties after phosphorylation, but further study of the lesions as they occur in association with different diseases is necessary. The possibility that the occurrence of these lesions in the heart in progressive myoclonic epilepsy may represent an enzymatic depression of carbohydrate metabolism has been suggested but not clinically proven. Investigative studies of this common lesion are to be encouraged.

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Acute Radiation Nephritis

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ACUTE RADIATION NEPHRITIS, comprising one of the most dramatic manifestations of radiation effects in human patients, remains an enigma both clinically and pathologically. It is the purpose of this paper to discuss the clinical and pathologic findings in 3 patients.

Materials and Methods

Three cases diagnosed as acute radiation nephritis were selected from the files of the Armed Forces Institute of Pathology, which include case material from military, Veterans Administration, and civilian sources. The clinical records and the pathologic material, consisting of sections prepared with hematoxylin and eosin, Masson stain, Gomori's trichrome stain, and periodic acid-Schiff (PAS) and reticulum stains, were available in each case for study.

Clinical Observations

Two of the patients died with evidences of renal failure 8 months after radiation therapy to the renal area; the third died from other causes, but at autopsy a similar renal lesion was found.

Report of Cases

Case 1 (AFIP Acc. 972280). The patient, a 28-year-old woman, had a diagnosis of stromatosis uteri made in 1958. She had had a hysterectomy in July of that year. Recurrence of the lesion necessitated another operation in September 1959. The case, in reference to the primary tumor, was discussed by Dr. Stout[1] at the 1959 meeting of the Pennsylvania Pathology Society. No hypertension was present on her several admissions to the hospital over a period of 2 years. The patient was then given radiation therapy directed to the retroperitoneum through 8 portals, anterior and posterior. The total skin dose was 21,492 r. Seven months later she was hospitalized with severe headache and a blood pressure of 220/130 mm. Hg. The blood urea nitrogen (BUN) level ranged over 39 mg. per cent. The patient died of acute pulmonary edema a few days after admission. At autopsy the kidneys weighed 150 and 170 Gm. The subcapsular surfaces were smooth, and the cortices were not narrowed.

Case 2 (AFIP Acc. 651497). A 37-year-old woman had had a panhysterectomy for a cystadenocarcinoma of the right ovary in April 1954; she received 3,100 r to the abdomen. Eight months later she was seen because of ankle edema, weakness, and easy fatigability of 1 month's duration. Progression of ankle edema and exertional dyspnea, cough, and orthopnea led to hospitalization. Her blood pressure was found to be 180/110 mm. Hg. The pressure remained high and there was progressive reduction of urinary output, reaching 100 c.c./24 hours, with elevation of BUN to 266 mg. per cent. She died 2 weeks after admission. At autopsy each kidney weighed 160 Gm. Numerous hemorrhagic areas were seen in the cortex, and the cut surfaces bulged slightly.

Case 3 (AFIP Acc. 681258). A 31-year-old man was hospitalized because of epigastric fullness of 4 months' duration but with no other symptoms. Urinalysis was normal. Exploratory laparotomy revealed an inoperable adenocarcinoma of the pancreas. Postoperatively he received 3,500 r through anterior and posterior abdominal parts and Thio-tepa.* The patient had intermittent bouts of intestinal obstruction, which corrected themselves without operative interference. A large inguinal mass appeared 7 months after irradiation. He was treated further with deep X-ray therapy with a total tumor dose of 1,155 r. Repeated transfusions were necessary to combat his anemia, but the patient died, while being prepared for transfusion, 8 months after initiation of the first course of irradiation. The right kidney weighed 200 Gm., the left 145 Gm. The right kidney was normal grossly; the left kidney showed numerous tiny reddish-brown punctate lesions throughout the cortex and medulla. Although this patient had anemia, there is no clinical information on the extent of renal failure; the appearance of the kidneys, however, was identical with that of the other 2 patients. I believe that had the patient been studied for renal function or had he lived, he would have manifested all the symptoms of renal failure.

Pathologic Findings

The gross appearance of the kidney in each case was described with the clinical aspects.

Histologically these 3 kidneys presented an identical picture. The architecture of the kidney was markedly altered in the irradiated areas showing (a) atrophy of tubules, hyalinization of the glomeruli, and fibrosis of the parenchyma (figure 1); (b) a more severe or dramatic change that chiefly involved the glomeruli and the arterioles and, to a lesser extent, the tubules and the parenchyma. The glomeruli were large and somewhat hypocellular (figure 2). The capillary loops were fused; the capillary walls appeared thickened by an eosinophilic fibrillary material, which was PAS-positive. The appearance suggested a smudgy thickening of the capillary basement membrane, but it was impossible to be certain whether this actually represented a change in the endothelial cells or in the basement membrane. Nuclear débris and red blood cells were present occasionally in the material, and at times the capillary loops were completely occluded by it. The glomerular cells displayed pyknosis. The capillaries of some glomeruli showed distinct fibrinoid necrosis, occasionally containing a few polymorphonuclear leukocytes. Some capillaries contained fibrin thrombi, while others were completely engorged as seen in glomerular infarction. An occasional capillary loop and glomerulus were spared. A few glomerular spaces contained red blood cells, fibrin, or proteinaceous matter. The glomerular capsule was essentially normal, and no glomerular adhesions or crescents were seen. There was no periglomerular infiltration. The tubular epithelium showed extensive damage. Many of the epithelial cells of the convoluted tubules showed thickening and vacuolization of the cytoplasm in which rare hyaline droplets were found. The tubules were dilated and contained varying amounts of red blood cells and hyaline casts, fibrin, and cellular débris. The walls of afferent arterioles and the small arteries showed fibrinoid necrosis, sometimes a few neutrophilic leukocytes were present, and an occasional vessel was occluded with fibrin. The arcuate arteries at times showed some fibroelastic subintimal thickening. Intimal fibrous thickening and medial fibrosis were seen in the larger arteries. Some of the endothelium of the smaller vessels was swollen.

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* Thiotetra-ethyl phosphoramid.

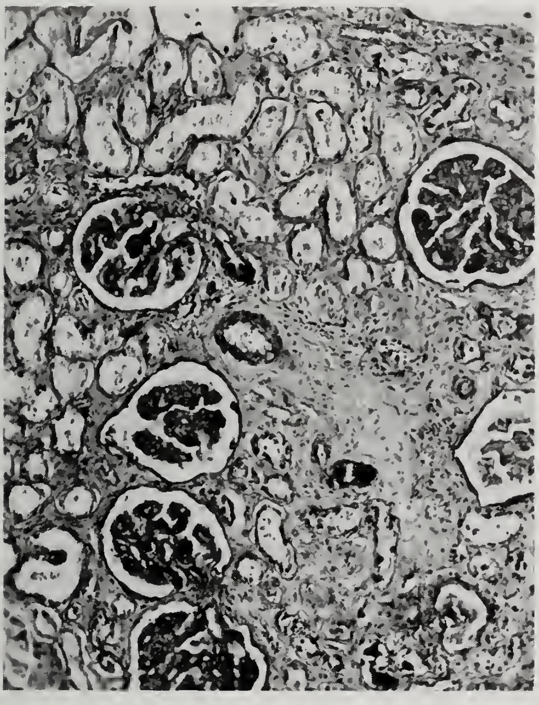

FIG. 1. Low-power view of the irradiated kidney of case 3. Note area of fibrosis with atrophy of tubules. There is necrotizing arteriolitis of 2 arterioles (AFIP neg. 64-5894).

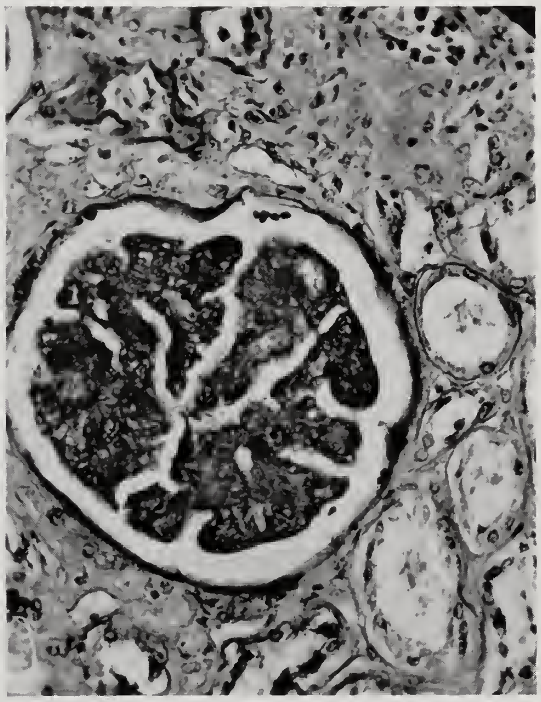

FIG. 2. Higher magnification of one of the glomeruli seen in figure 1. The loops are fused. The capillary walls are thickened by a fibrillar mass. The lumen is almost completely obliterated. There is no cellular proliferation or crescent formation. Note tubular atrophy and fibrosis (AFIP neg. 64-5896).

Discussion

The literature dealing with the effects of radiation on the kidney was reviewed.[2-5] The first major contribution on the possible direct ill-effects of irradiation in the human kidney was by Dean and Abels.[6] A 20-year-old woman had had irradiation to the retroperitoneal area for the treatment of a lymphosarcoma. Her urinalysis and blood pressure had been normal before irradiation therapy, but 7 years later her blood pressure was elevated. Treatment for progressive elevation of her blood pressure over the next 9 months led to the discovery of a high nonprotein nitrogen and a shrunken left kidney, but the usual renal function tests were inconclusive in determining the impairment of function of the left kidney. Dissatisfied with the findings, convinced that the shrinkage of the left kidney, which had developed after irradiation therapy, was responsible for the hypertension and that this kidney should be removed before irreversible cardiovascular damage ensued, yet unwilling to do so without confirmation of the existence of a damaged kidney, Dean and Abels applied some of the newer renal function tests. They found that the function of the left kidney was indeed severely diminished. Nephrectomy resulted in a drop in blood pressure to the normal level where it remained 14 months postoperatively. The pathologic examination showed the upper pole of the removed kidney to be normal, whereas the lower third was contracted. In the contracted area marked sclerosis of the vessels, extreme obliterative arteritis, and extensive fibrosis of the parenchyma were found.

A second such major contribution was made by Zuelzer and associates[7] in their report on the findings in 3 children who had been given radiation over the renal area. The doses ranged from 5,200 to 6,800 r. All 3 patients developed the clinical picture of renal failure including albuminuria, azotemia, and hypertension. The pathologic findings in all 3 kidneys were similar. Although the interstitium, the vessels, the tubules, and the glomeruli were involved, Zuelzer et al believed that the primary lesion was glomerular and indicated injury to the endothelium and the basement membrane of the glomeruli.

Beginning in 1952, in a series of articles describing the effects of radiation on the human kidney, Kunkler et al,[8] Luxton,[5, 9, 10] and Russell[11] have elucidated the clinical and pathologic picture. In all, 54 patients were reported from Manchester, 13 of whom manifested proteinuria; 6, hypertension; 5, late malignant hypertension; 10, chronic radiation nephritis, and 20, acute radiation nephritis.

Our own experiences confirm the above observations. The majority of patients who are given radiation to the renal area show proteinuria, many without hypertension yet some with hypertension. After a number of years those having hypertension usually develop cardiovascular sequelae or malignant hypertension. Regardless of whether the patient dies of renal failure or of other causes the kidneys usually show little change in the glomeruli. The tubules may contain a few casts, and if hypertension has been present the vessels may show sclerosis. In many instances, however, if a reticulum-stained section of the kidney is examined there is an unmistakable collapse of the renal parenchyma indicating more extensive damage not readily evident with the routine hematoxylin and eosin stain.

The case reported by Dean and Abels[6] exemplifies the third category. These patients, who have had some hypertension and albuminuria but who have otherwise apparently been in good health for many months or even years, suddenly manifest the symptoms of fulminating malignant hypertension. Unless the diseased kidney is removed the outcome is fatal. But if the patient has had the syndrome of benign hypertension or chronic radiation nephritis, and nephrectomy is impossible, either because he has only 1 kidney or because both kidneys have been irradiated, hypotensive drugs may be valuable.[5] When the possibility exists that 1 kidney may have been more extensively irradiated, early recognition of the symptom-complex and a carefully detailed study of the function of each kidney may enable the clinician to consider unilateral nephrectomy.

The renal lesion in this group consists of severe sclerosis of the vessels and necrotizing vasculitis. The glomeruli, although frequently involved, show lesions of the type seen in malignant nephrosclerosis. These kidneys also manifest evidence of chronic radiation nephritis.

The symptoms of chronic radiation nephritis vary, depending on the extent of the renal damage, but generally after a period of apparently good health the patient manifests lassitude, tiredness, and weakness. Anemia is usually present. There is a gradual rise of blood pressure usually ranging between 130 and 150 systolic and 80 and 100 diastolic. The specific gravity of the urine is low, and there is proteinuria and moderate azotemia. The lower pole of 1 or both kidneys, or all of 1 or both kidneys, depending on the extent of the field, is shrunken and scarred. Histologically there is severe atrophy of the tubules, hyalinization of many of the glomeruli, and fibrosis of the parenchyma. The arteries and arterioles show varying degrees of sclerosis and may manifest focal areas of fibrinoid necrosis.

The pathogenesis of this lesion has recently been studied experimentally.[2] The lower pole of a transplanted canine kidney was given 2,500 r in a single dose, while the other kidney was left intact and shielded. Three of the 4 animals examined at 4 weeks and all the animals examined at 8 weeks showed extensive cortical peritubular hemorrhage. The glomeruli showed no changes in 4 weeks, but in the dogs examined after 8 weeks some of the glomeruli showed focal or diffuse thickening of capillary walls and of the basement membranes of Bowman's capsule together with periglomerular fibrosis. Focal areas of fibrinoid necrosis of glomerular tufts were noted.

The most prominent alteration, aside from hemorrhage, was the degenerative change observed in the cortical tubules of the irradiated areas. Beginning at 8 weeks there was progressive fibrosis of the interstitium and development of arterial and arteriolar sclerosis—a picture similar to that observed in human chronic radiation nephritis.

In an exhaustive series of experiments Maier and Casarett[4] studied acute, localized external orthovoltage irradiation (500 rad, 1,000 rad and 2,000 rad) to the renal area of animals. When the animals were sacrificed at 6 months, minimal changes were present in those receiving 500 rad, intermediate changes at 1,000 rad, and severe changes at 2,000 rad. The authors characterized the changes as those of arteriolonephrosclerosis.

We are in complete agreement with Maier and Casarett[4] that the application of the term "chronic radiation nephritis" to this lesion is a misnomer. There is no evidence of nephritis either in human patients or in experimental animals. The renal changes are more than those commonly encountered in nephrosclerosis. Nephrosclerosis is present, but it is superimposed on a kidney in which there has occurred extensive damage to the tubular epithelium.

In contrast to these 3 categories, i.e., proteinuria, malignant hypertension, and chronic radiation nephritis, acute radiation nephritis presents a different picture both clinically and pathologically.

In the 3 cases reported in this study the latent period between X-ray therapy and the onset of symptoms of renal involvement was 8 months. Luxton[5] gives the range as 6 to 13 months for adults and shorter for children. Progressive ankle edema, proteinuria, exertional dyspnea, orthopnea, headache, hypertension, and anemia are the earliest symptoms.

Pathologically, too, the lesion is quite distinct. Although the process involves all the components of the kidney and is frequently superimposed on a preëxisting chronic damage of the kidney, as evidenced by tubular atrophy, interstitial and glomerular fibrosis and sclerosis of the vessels, the chief lesion is in the glomeruli and consists of degenerative changes, principally involving the endothelium and the basement membrane. Rosen and associates[12] have demonstrated by means of the electron microscope that considerable amounts of basement membrane-like material are present on the endothelial or the luminal side of the capillary. They believe that the endothelial cells were surrounded by, and even contained lamina densa-like material.

Rosen and associates[12] have suggested that the changes represent the reaction of endothelial cells to the abnormal stimulus and to the formation of excessive amounts of basement membrane-like substance. Another possible explanation is that the changes represent a deposit of blood protein aggregates that are locally modified. A third and less likely possibility is that radiation affects the basement membrane. Our own impression is that the changes represent the reaction of the endothelium to the abnormal stimulus.

The designation of the lesion as "acute radiation nephritis" is also a misnomer. No evidence of a preëxisting inflammatory reaction or a true glomerulonephritis is seen. Superimposed on chronic renal damage there is a peculiar change in the endothelium of glomerular capillaries, which probably indicates a degenerative reaction. Until the nature of this change is clearly defined, however, it seems preferable to continue designating the lesion as "acute radiation nephritis."

Summary

Three cases of acute radiation nephritis have been reported. All 3 patients died within 8 months after radiotherapy to the kidney area, 2 with symptoms of renal failure and the third from other causes. All 3 showed similar renal lesions at autopsy.

Pathologically 2 types of changes were observed: (a) atrophy of tubules, fibrosis of the parenchyma, and sclerosis of the vessels, indicating an older process, and (b) a superimposed severe alteration of the glomerular loops, which suggested degenerative changes in the endothelium.

(Continued on page 94)

The Rectal Mucosa as a Biologic Indicator of Radiation Injury*

I. Preliminary Cytopathologic Observations

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Recognition of the potential biologic hazards of ionizing radiation dates back to the year of its discovery, when the first superficial burns were observed and their correlation to this new form of energy correctly interpreted. In the subsequent decades increasing efforts were expended in the quest for more efficient methods of detection and for improved safeguards against this danger. Progress in this area initially lagged behind the development of the sources themselves, but in the last 20 years detection has received much greater attention. At the present time there are available to us numerous means of dosimetric determinations. Those of purely physical or chemical nature define the field of radiation as it impinges on the particular dosimeter and, as such, are of great value in the calculation of possible extent of exposure of personnel either wearing the dosimeter or in the immediate vicinity of the detecting device. There are, however, certain significant disadvantages to these physical methods, among these being (1) the inherent limitations of the physicochemical systems, including the possibility that they may not even be present or operational at the time of the exposure, (2) that the data reflect only the dose to the individual at the location of the dosimeter and, therefore, do not necessarily indicate what the various other portions of the body or, for that matter, the total individual may have received, and (3) that they indicate the amount of radiation striking the body but do not in any way reflect the reaction of the total body or any part thereof to this injurious agent. These significant deficiencies serve to accent the requirement for an indicator inherent within the biologic systems of the body.

The search for such a mechanism is not new. The early radiotherapists employed local skin erythema as just such a biologic signal and placed considerable reliance upon this reaction for several decades. In the early 1940's the Manhattan District Project, ultimately leading to the atomic bomb, and the many related radiation milestones concomitant with this event heralded the future possibility of man's exposure to lethal amounts of highly penetrating radiations.[1, 2, 3] In the case of whole-body exposures, certain physiologic signs and symptoms were repeatedly stressed as characteristic, being useful in diagnosis and prognosis. These clinical manifestations have been found to be not only largely exaggerated in their significance and specificity but quite inconsistent, there being considerable individual variation in both incidence and severity.

To provide a more reliable and objective gauge, much emphasis was then placed upon the hematologic response to radiation exposure, and this is, to date, the most feasible and reliable biologic indicator. In spite of certain distinct disadvantages to the employment of this system, principally the inherent variations and the reflection of general body health, it continues as the indicator of choice.[4, 5]

The ideal biologic indicator for penetrating energetic radiations, however, should be (1) an accurate and reproducible reflection of body response, (2) independent of the character of the radiation, but with a distinct relationship to both dose and time after exposure, (3) independent of general health and complicating diseases, (4) useful in either whole-body or partial-body exposures, and (5) operational and practical under adverse or emergency conditions.

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* This investigation was supported by Contract WEB 03.102 from the Defense Atomic Support Agency.

The "Principles of Laboratory Animal Care" as promulgated by the National Society for Medical Research were observed during this study.

Research in this field is being channeled largely along 4 major biologic parameters—functional, biochemical, immunochemical, and cytological. At present no satisfactory system is apparent in the offing. As an expedient, therefore, it seems logical to employ as many potential indicators as may prove practical in known or suspected overexposures. That is to say, the clinical manifestations and peripheral blood analyses should be augmented wherever and whenever possible.

A review of the responses of the various tissues and cells of the body discloses a rather well-defined sequence of diminishing reactivity to ionizing irradiation. Under the circumstances of current practical analytical procedures only 5 cell types—lymphocytes, erythroblasts, myeloblasts, intestinal crypt cells, and germinal cells of the seminiferous epithelium, all representing rapid cell-renewal populations—react with sufficient alacrity and definitive cytopathologic characteristics to prove potentially valuable from the standpoint of a histologic radiation dosimeter.

We have chosen to explore the cell responses of the rectal mucosa primarily because of its accessibility to single and repeated biopsies.

Materials and Methods

For the purpose of obtaining experimental information on the potential of the rectal biopsy this project was accomplished in 3 phases:

The first phase was a comprehensive review of the relative effects of acute radiation upon the cellular components of the various segments of the gastrointestinal system of the white rat. Once this baseline cytopathologic picture was established, the same basic methodology was employed in analyses of specimens of rectal mucosa at 2 dose levels, 200 r and 800 r, with postexposure time intervals of 1, 6, 12, 24 and 48 hours. The final phase was a duplication of the biopsy study, but with shielding of the thorax, head, and upper extremities in order to assess any possible variance in response between whole-body and primarily gastrointestinal radiation.

The young adult female Sprague-Dawley white rat, 3 to 4 months of age and weighing 200 to 350 Gm., was the model of choice because of convenient size and ease of handling and the abundance of correlated experimental data, both in the literature and previous intramural studies at this laboratory.

X-radiation was accomplished by using settings of 300 KVP and 20 ma with a distance of 79 to 85 cm. from target to center-of-animal mass and resultant dose rates of 56 to 60 r/min. For the purpose of whole-body exposure the animals were placed in a flat wooden chamber with vented plastic lid. This chamber was positioned within the X-ray beam on a revolving table, which was kept in motion during the exposure to insure a near-constant total dose.

Preliminary studies had indicated no histologic differences between the responses of fasting animals and those on a standard diet. There was, therefore, no restriction as to food and water intake.

Groups of 4 animals each were sacrificed at 1, 3, 6, 12, 24 and 48 hours after exposure. Necropsy was performed immediately and representative tissues of the gastrointestinal system fixed in 10 per cent buffered formalin. Histologic sections were prepared by standard procedures and cut at 4 micra with an "ultrathin" microtome with a high standard of consistency. All sections were processed and stained by the same technician.

Essentially the same procedure was followed with the animals from which rectal biopsy specimens were taken, except that just prior to sacrifice while they were under ether anesthesia the rectal mucosa was carefully everted with forceps and a pinch biopsy of the mucosa performed. Necropsy was then accomplished as before.

Results

Since the goal of this particular study has been primarily to determine the potential of the rectal mucosa as a means of ascertaining the body's response to ionizing radiation, the relatively small number of 86 animals was employed and there was a certain selectivity in the biologic parameters analyzed. It has not been intended that there should be established statistically valid numerical indices but rather that there should be critical observation and cataloguing of the qualitative nature of the mucosal response.

One of the primary goals in the preliminary investigation of the gastrointestinal response was a histopathologic evaluation of the sequential rectal mucosal changes in 20 rats subjected to 750 r and sacrificed at 30 minutes, 1, 3, 6, 12, 24, 48, 72 and 96 hours. The changes observed were remarkably similar to those reported for the small intestine.

Within the first few hours, and often detectable as early as 30 minutes after exposure, there is extensive injury of the "principal" or proliferating cells at the bases of the glands. The earliest visible manifestations are slight to moderate cellular and nuclear swelling accompanied at times by crescentic or annular perinuclear clear zones. These nonspecific and controvertible alterations are further associated with condensation of the nuclear chromatin, apparent dissolution of both nuclear and cytoplasmic membranes and finally fragmentation of the pyknotic nucleus. These densely-staining fragments of both nuclear and cytoplasmic substances seemingly form into vacuoles of varying size which have the appearance of being both intracellular and in the interstices between the epithelial cells. This cellular degeneration attains its peak several hours after the radiation, at which time up to 75 per cent of these crypt cells may show distinct deterioration depending to some extent upon the magnitude of the total dose absorbed. Concomitant with this process is a steady removal of the cellular débris, although activity of the epithelium itself has been greatly depressed or arrested through the action of the radiation. This interference with the normal cell maturation is best evaluated by observing the relative progression of tritiated-thymidine labeled crypt cells in irradiated and unexposed individuals.[6] The cellular débris is apparently removed by 2 routes either through expulsion into the intestinal lumen or by phagocytosis and transport to submucosal lymphatics.

From 12 to 24 hours after irradiation cellular débris is minimal and consists of those cells that were already mature or in resting phase at the time of exposure and, therefore, relatively unresponsive to the irradiation. For the most part these cells showed little or no overt injury. At this point there is very little from the aspect of cellular morphology to suggest severe radiation injury. With the exception of the removal of the destroyed cells, functional, metabolic and reproductive activities of the irradiated rectal mucosa have been essentially at a standstill or greatly depressed. There are, however, certain important interpretive histologic characteristics. The number of cells remaining at the bases of the crypts is significantly diminished, and the total arrest or suppression of mitosis persists until the radiation-induced depression is released. This release is generally attended by a shower of mitotic figures, the time of appearance being related to total dose received. The eventual frequency with which this mitotic activity occurs is also roughly proportional to the magnitude of the exposure. The vast majority of these mitotic figures are atypical in formation and configuration and, therefore, do not represent any significant potential epithelial-cell proliferation.

As the various functions of the epithelium are reactivated, or reassume normal levels, it is still apparent that cell renewal has been severely compromised. The remaining viable cells are, therefore, not forced upward to the extrusion zone by the usual flow of cells stemming from the crypt, and so they tend to mature and form goblet types even at the bases of the glands. This failure of migration may persist to the point that the life span of the cell is completed essentially in situ.[7]

From 24 hours on the identification of radiation injury is no longer any particular problem. There is a steady depletion of the total number of lining cells through the process of attrition and because fewer replacement cells are being produced.

Most of those remaining principal cells that had been irradiated during a relatively sensitive portion of the cycle but not immediately killed have now attempted division, and there is either cell death or marked pleomorphism accompanied by giantism and multinucleation in the daughter cells. Eventual degeneration may occur at this time or during subsequent abortive attempts at division.

The next few days are critical in that there is a continuing struggle to maintain some sort of protection for the mucosal surface. This is accomplished by extreme flattening of the large pleomorphic cells in an attempt to perpetuate the epithelial continuity and a distinct contraction of the lamina propria to shorten the depth of the glands and thereby lessen the exposed surface area.

In whole-body exposures survival of the individual beyond this period is largely dependent upon the ability of the gastrointestinal tract to regenerate epithelium from those few cells that have escaped severe injury. General debilitation and severe hematologic disturbances are major factors governing survival at this time.

When these general observations are applied to the specific radiation levels employed in this study, certain dose-dependent differential features become evident.

The time of onset of cellular degeneration in the crypts is essentially unrelated to total dose within the range of this investigation but is relatively fixed as to time after exposure. At 3 hours there was readily identifiable cellular degeneration in tissues given doses of both 200 r and 800 r, with little quantitative difference (figure 1). This appears to peak at about 6 hours, at which time the extent of cell destruction appears significantly greater in the higher dose (figure 2). The rapidity of removal of débris depends to some extent on the dose, with almost total clearance by 12 hours in the lower dose but persistence for several more hours in the high range.

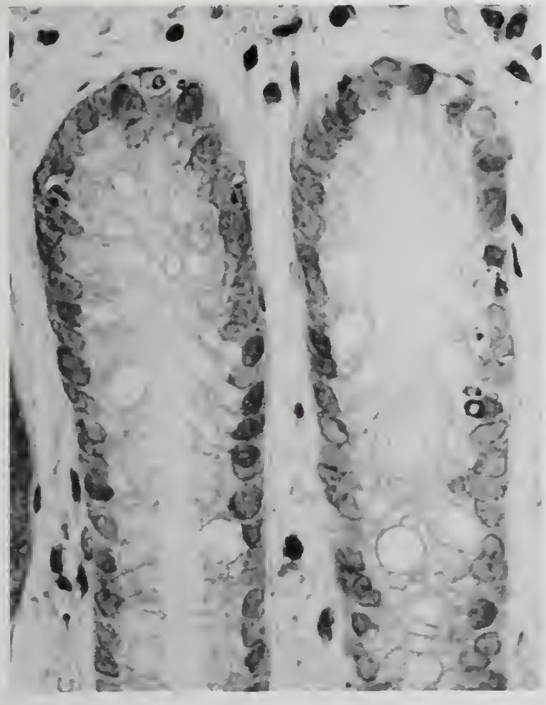

FIG. 1. Rectal tissue 3 hours after exposure to 200 r. Number of deep crypt cells essentially normal. Pyknosis and karyorrhexis visible in a few cells. No cell division (AFIP neg. 64 676).

This, in part, reflects the period of attenuated mucosal activity, which is a consistent finding and is related in both degree of depression and duration to total radiation received. The magnitude of dose absorbed seems to have its most pronounced bearing upon the reappearance of mitotic figures in numbers eventually exceeding the control values. For example, the animals in the group irradiated with 200 r exhibit rare mitotic figures during the period of maximum depression but rebound early in the recovery phase, and many are in evidence 12 hours after exposure (figure 3). In contrast, the animals given 800 r present no mitotic figures in the early postexposure period and lag by several hours in reinstituting cell division, and the response is less pronounced (figure 4). This correlation does not hold true for the small intestine, with its extremely rapid and active cell-renewal process; here, differentiation between the groups iradiated with 200 r and 800 r is impractical because of the accelerated recovery and resultant profuse shower of mitotic figures. With the reactivation of the mucosa, the cytopathologic features of the 2 dose levels tend to exhibit less variance.

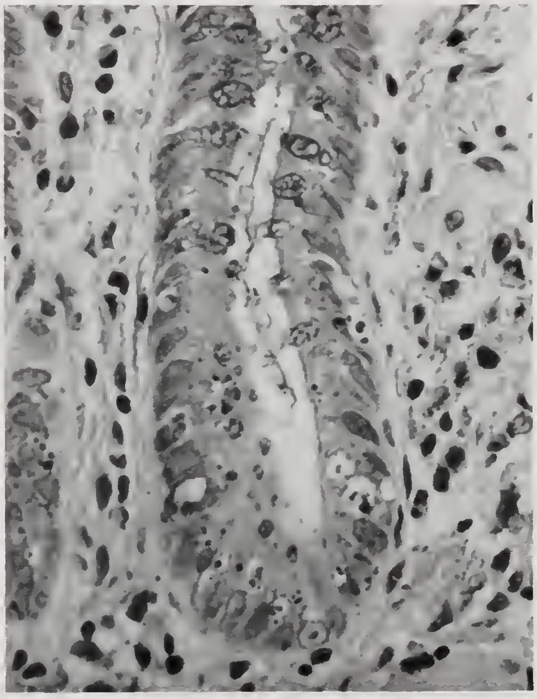

FIG. 2. Tissue 6 hours after exposure to 800 r. Maximum initial degeneration of proliferating cells. Cellular débris appears as small, dense hyperchromatic spherules, frequently enclosed in vacuoles. The residual cells at the base of the gland show nuclear alteration—irregularity of configuration, condensation of chromatin, perinuclear clear zones; degeneration of lymphocytes apparent in the lamina propria (AFIP neg. 63 3743).

In the lower dose range the 24- to 48-hour interval assumes relatively static and uniform characteristics at this time, with continuing mitosis, slow and deficient cell renewal, and in situ cell maturation. On the other hand, those biopsy specimens from the high dose still exhibit a persistence of the depression, with only rare, atypical mitotic figures encountered and cell degeneration still a principal histologic feature (figure 5). By the end of the arbitrary experimental time limit of 48 hours (figure 6) the 2 dose levels bear a close similarity and have little further practical value as an indicator of either time or dose response.

Discussion

The perpetuation of the epithelial barrier between the lumen of the intestinal tract and the general circulation of the body is a highly complex mechanism having as its basis a rapid cell-renewal time. This factor plays a major role in the establishment of its vulnerability to ionizing radiation. This same sensitivity, however, furnishes early histologic evidence as to the severity of intestinal damage and in certain circumstances may prove a diagnostic and prognostic gauge of whole-body or partial-body injury and suggest the therapeutic regimen that should be instituted.

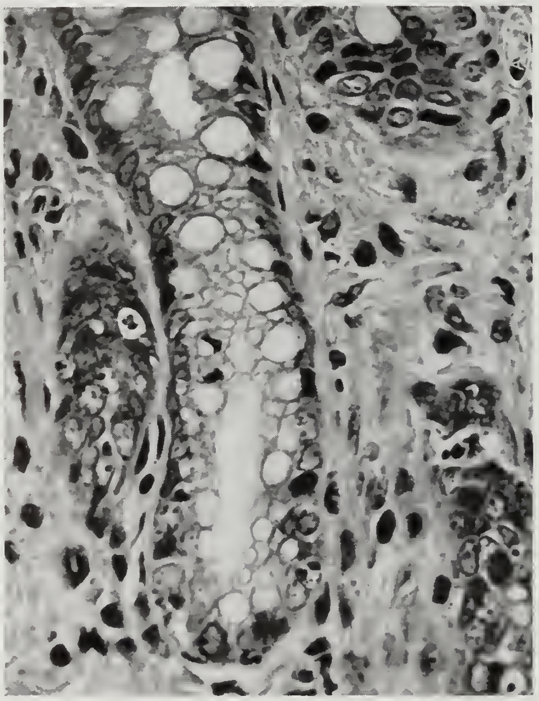

FIG. 3. Tissue 12 hours after exposure to 200 r. Most of the cellular débris has been removed. The radiation-induced epithelial suppression has been released at this dose level, and mitotic activity has been renewed (AFIP neg. 63 3737).

Although the histopathologic characteristics induced in the gastrointestinal mucosa through the action of ionizing radiation have been well established,[6, 8–12] the comprehensive interpretation of the alterations observed in this investigation requires a review of the kinetics of this pathogenesis.

First of all, the changes that occur appear qualitatively similar regardless of the type of radiation or mode of administration, the exception being parenterally administered alpha emitters whose depth of penetration generally compromises only those cells at the tips of the villi.[13] All energetic, penetrating radiations result in like sequential injuries, with certain variance in severity and time of appearance.

There is, however, considerable variation in the degree of cellular pathogenesis induced by the action of ionizing radiation among the different segments of the gastrointestinal tract. The small intestine is the most responsive, followed by the large intestine and finally the gastric mucosa, although the changes in all are both rapid and dramatic. The rectum reacts much as the colon, but to a lesser degree.

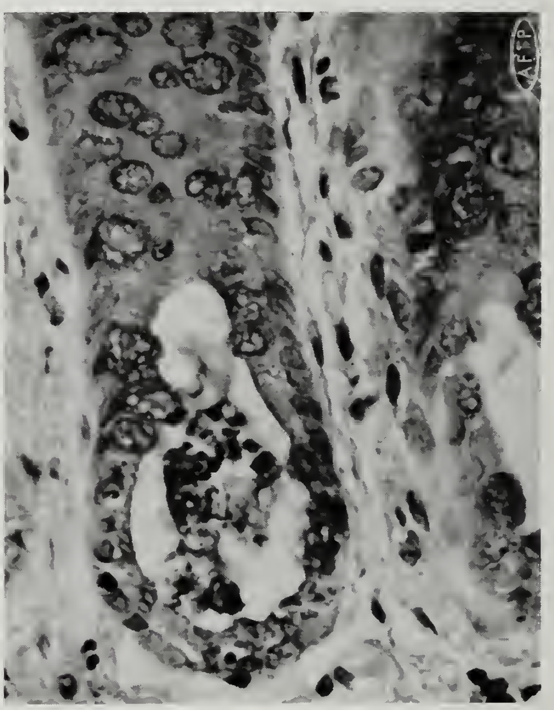

FIG. 4. Tissue 12 hours after exposure to 800 r. In contrast to the picture in figure 3 the higher dose results in persistent epithelial depression with no resumption of cell division. Cellular débris tends to accumulate in the lumens of the glands and cell destruction continues but at a greatly reduced rate (AFIP neg. 63 3745).

The majority of investigations into the response of the gastrointestinal system to ionizing radiation are based upon cytopathologic change induced in the small intestine. Consideration must be given to those important basic structural differences that exist in the rectum and that bear upon the eventual histologic changes under study.

For example, there are no villi in the large intestine, and the overall thickness of the mucosa is less than that of the small intestine, but the glands of Lieberkühn are half again as long as those in the small intestine. The proliferating cells are situated at the bases of the glands and provide a continuing renewal of the epithelium. There is a predominance of the mucin-producing goblet type, as these cells mature and progress up the gland to the zone of extrusion at the luminal surface.

The lamina propria is much the same as in the small intestine, although there is a slight increase in the amount of connective tissue and relatively fewer mononuclear and granulocytic cells under normal conditions.

As the anorectal junction is approached the crypts rapidly become shorter and more widely spaced. There is a tendency to increased density of the connective tissue elements. In this study, therefore, the biopsy specimens were taken a short distance above this point in order to achieve greater uniformity of the glandular pattern.

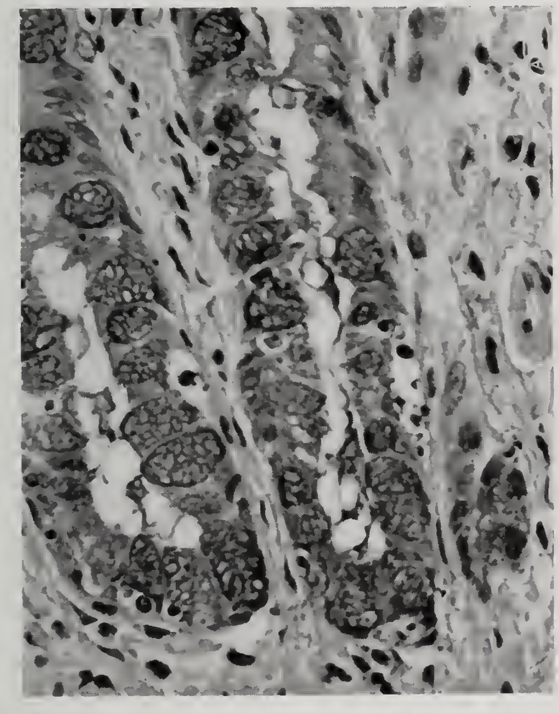

FIG. 5. Tissue 24 hours after exposure to 800 r. A few cell divisions have been attempted, with death of the daughter cells. Failure of normal cell migration has resulted in maturation of the epithelial cells in the crypts to produce predominantly goblet forms. The overall number of cells at the base of the crypts is significantly diminished (AFIP neg. 63 3747).

The histologic changes that have been described should be viewed in the light of the intent of the study, that is, a preliminary morphologic evaluation of the potential of the rectal mucosa as an indicator of radiation injury.

There are certain attributes that are distinctive enough to warrant additional, more sophisticated exploration of this proposed augmentative biologic dosimeter. Of greatest interest from the standpoint of exposure-response relationship is the cytopathologic time-sequence factor. The cellular response to the radiation occurs promptly and is readily detectable within 2 to 3 hours down to the 50–100 r level. There follows a rapid progression of events; that is, the initial sequence of dynamic histopathology is completed within 48 hours, with subsequent pathologic features developing more slowly and with less distinctive relationship to time after exposure. The timing of these early events closely correlates with postexposure interval and in this respect has perhaps its greatest value. The cytopathologic picture itself is only roughly proportional to the total dose in this range of clinical interest and requires careful interpretation to be in any way meaningful. Although the preparation of these biopsy specimens is time-consuming, it is all done by standard laboratory procedures and, therefore, is conducive to acceleration and simplification.

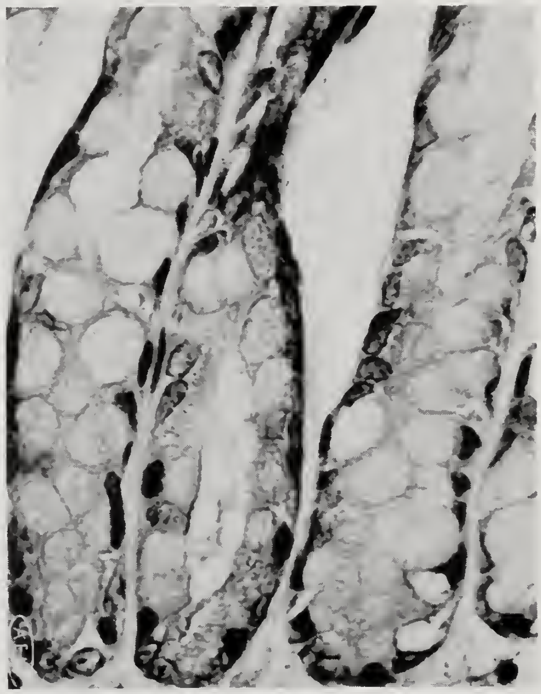

FIG. 6. Tissue 48 hours after exposure to 800 r. Recovery is minimal at the high dose. Although cell maturation has progressed to the point where the entire gland appears composed of swollen mucin-producing cells, the mitotic index remains essentially zero (AFIP neg. 63 6502).

These advantageous characteristics are, in part, counteracted by certain features that are considered incompletely investigated but essential to a complete evaluation of this response as a biologic indicator. For example, this method has not been evaluated in large animals or man, although the effects are anticipated to be quite similar. The complex nature and sequence of the postradiation events, although considered characteristic, may not be entirely specific. These effects must be determined for the full range of clinically significant acute total doses, e.g., 100 r to 1,000 r. The statistical variations of cytopathology and time sequence have yet to be determined in a large number of animals.

The greatest limitation is that these changes reflect primarily the response to radiation as it subtends that specific area of the body, and it therefore has some of the same limited potential as the physical dosimetric systems.

Summary

The ever-increasing employment of high-energy penetrating radiation dictates the necessity of highly efficacious means of determining the extent of biologic injury incurred when an individual is exposed to excessive quantities of ionizing radiation. Present physicochemical dosimetric systems are generally capable of defining the magnitude of radiation at a specific point in space but fail to reflect the reaction of the biologic system that absorbs this energy. Clinical signs and symptoms suggest the degree of injury, especially when all or most of the body has received this trauma. Hematologic analyses provide generally reliable indices of total dose received and the postexposure time period but should be augmented by additional biologic indicators when feasible. The characteristic morphologic alterations induced by radiation in the mucosa of the rectum as investigated by biopsy techniques provide a specific postexposure timetable of histopathologic events and a roughly quantitative relationship to total dose.

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Effect of Tetracyclines on Dentition—Scofield

(*Continued from page 59*)

use be discontinued. They should, however, be administered judiciously, and, if long-term therapy is indicated, the patients' parents should be alerted as to their potential effect upon the child's teeth. Caution should also be observed in prescribing the drugs during the latter months of pregnancy.

The author wishes to express his appreciation to Lt. Commander A. D. Hoekzema, MC, USN, and Captain H. W. Davidson, USAF, MC, who contributed the cases used in this report, and to Mr. Julius Halsman, Chief, Photography Division, Armed Forces Institute of Pathology, who took the photomicrographs.

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Structural Changes in the Thyroid Glands of Healthy Young Men

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Relatively few studies of the morphologic characteristics of the human thyroid gland at various ages have been made. Mortensen et al[1] systematically studied 1,000 thyroid glands removed in toto from "subjects undergoing routine consecutive postmortem examination" at a large clinic. Each intact gland, "actually in the hands of the examiner," was palpated and observations made. The gland was then sectioned into slices 0.2 cm. thick, and these were scrutinized for macroscopic lesions. All real or suspected lesions were studied microscopically. In order to establish what constitutes the structure of the clinically normal thyroid the authors selected 821 thyroid glands from patients who had shown no clinical evidence of thyroid disorder. All age groups were represented, but most of the glands were from individuals over 45 years old. There were 107 patients between the ages of 15 and 39 inclusive, which represented 11.7 per cent of the series. A study of 100 human thyroid glands obtained at consecutive postmortem examinations by Park et al[2] included only 5 patients between 11 and 40 years of age.

Because reports such as those just mentioned are based largely on data from individuals in the older age groups who died as the result of serious organic disease, our group thought that there was a definite need for a study of the morphologic characteristics of the thyroid in young healthy adults. We wished to obtain data which could be compared with those obtained from studies of the thyroid glands of older persons. We were especially interested in finding at what age thyroid alterations develop, particularly in reference to the period when nodules and signs of inflammation appear in apparently normal active men. We are not aware that this information is available at present and consider it to be of importance in the study of the aging process.

Materials and Methods

This report is based on a study of 137 formalin-fixed thyroid glands removed in toto. The glands were obtained almost entirely from military personnel between the ages of 18 and 39 years who died suddenly and unexpectedly. A total of 151 glands were studied; however, 14 were eliminated from this report because the men had disorders that reflected the possibility of long-standing systemic disease. The cases retained were largely of individuals who died violent deaths in accidents. It is reasonable to assume that virtually all of the individuals were in good health because most were on active duty overseas and subject to frequent periodic physical examinations. Grouping of the cases by geographical residence was impractical.

Each formalin-fixed gland was embedded in a 3 per cent aqueous solution of agar in a paper cup and frozen at −12°C. The frozen mass of agar containing the gland was removed from the paper cup and cut by a meat-slicing machine into slices averaging 0.2 cm. in thickness. The slices were transferred to an X-ray view-box (lying flat on a table) and examined by transmitted and reflected light. It was found that study by transmitted light revealed many more details of structure, particularly the distribution of connective tissue and the presence of dilated follicles, than did reflected light.

Histologic sections were prepared of all real and suspected lesions and of representative unaltered portions of each gland. Sections of all blocks were stained with hematoxylin and eosin, and special stains were used in a few instances. In addition, every section was studied in polarized light, which was especially useful in revealing the presence of collagen and crystals.

A preliminary study with a 6× hand lens was made of every section. This was helpful in obtaining information concerning the distribution of collagen and in judging early nodule formation, often a difficult task.

The details of histologic examination of each case were recorded on individual work sheets prepared in such a manner that the information could be transferred to a data-processing system and analyzed. It is not feasible to give in detail the various alterations tabulated, but among the items were nodules, scars, lymphocyte infiltrations, foci of squamous metaplasia, follicle size and type of epithelium, presence of crystals, tissues ectopic within the thyroid, arterial changes, the state of preservation of the parenchyma, and the presence of artifacts.

Findings

Weight. The weight of the glands ranged from 8.5 Gm., found in a 28-year-old man, to 70 Gm., found in a man 38 years old. The median weights according to age groups are shown in figure 1 and table 1. These data indicate a tendency for the weights to increase with age.

TABLE 1: Median Weight of Thyroid Gland by Age Distribution

Age Group	Total Glands	Weight of Thyroid Gland (Grams)			
		Median	Heaviest	Lightest	Range
Total	136*	19.0	70.0	8.5	61.5
15–19	2	17.0	21.0	13.0	8.0
20–24	76	17.6	32.0	11.0	21.0
25–29	21	20.0	40.0	8.5	31.5
30–34	21	19.0	34.0	11.0	23.0
35–39	16	21.7	70.0	14.0	56.0

* Excludes 1 thyroid gland in the 30–34 age group with weight undetermined.

Nodularity. In the age groups studied we found it quite difficult at times to decide upon gross examination whether a given lesion was really a nodule, an area of increased or decreased translucency, a tip of a lobe, or simply a localized bulging of the surface of the gland. Many of the lesions that Mortensen et al[1] classified macroscopically were not present in our material. It was necessary in most instances to judge the presence or absence of a nodule by evaluating all the observations made by gross examination and the use of the hand lens and microscope. When all of the cases had been tabulated we were so unsure of the consistency of our interpretation of nodules that the entire group thought to contain nodules was reëvaluated. This review resulted in the elimination of about 15 per cent of the previously accepted nodules. We dwell upon our difficulty in recognizing nodules to emphasize that in the age groups being studied some of the nodules may be so ill-defined that there can be differences of opinion as to their presence.

Histologically, nodules were defined as rounded or ovoid groups of thyroid follicles separated from the rest of the parenchyma by a connective tissue "capsule." In most cases this capsule was merely a thin layer of fibrous tissue, although in a few instances it was an obvious structure.

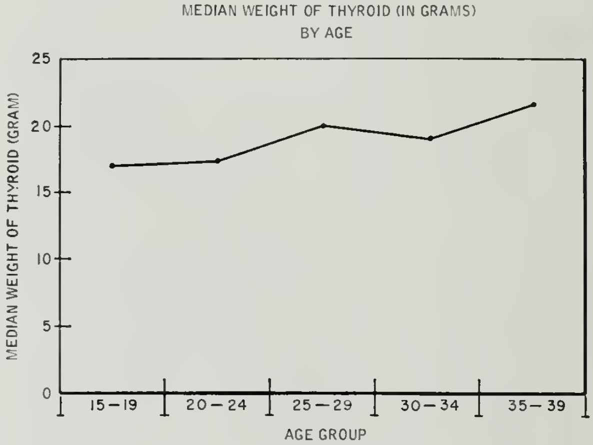

FIG. 1. Median weights of thyroid according to age groups.

Although some pathologists designate as nodules only those formations with a follicular pattern distinctly different from that of the surrounding parenchyma, we were willing to accept as examples those structures with follicles having essentially the same appearance as the follicles elsewhere in the gland, provided there was a recognizable connective tissue boundary. We tried to avoid including as nodules examples of lobular accentuation resulting from thickening of fibrous septa. We tended to be slightly more rigorous in admitting nodules when the glands had prominent connective tissue trabeculae.

The majority of the nodules could be classified as the "colloid" type; that is, they contained colloid-filled follicles, some of which were much larger than the majority of follicles in the surrounding parenchyma. A few nodules were classified as "adenomatoid" because of their increased cellularity. Some pathologists would probably have placed the colloid nodules and the adenomatoid nodules in 1 group.

The nodules ranged between 0.1 cm. and 2.0 cm. in diameter. There were seldom more than 2 nodules in a gland. Only 1 gland contained many nodules. Only 2 nodules, both in 1 gland, could be in any way interpreted as true adenomas. These nodules appeared to be composed of Hürthle cells, but in other respects their structure did not differ from that of the nodules found in the other glands. The nodularity by age distribution is shown in table 2. Mortensen and co-workers[1] reported that approximately half of the glands in their series were nonnodular. In our series 87 per cent were devoid of nodules. In contrast to Park and co-workers[2] we found no calcification or fibrosis in the nodules.

TABLE 2: Nodularity by Age Distribution

Age Group	Total Glands	With Nodules	
		Number	Per cent
Total	137	18	13
15–19	2	—	—
20–24	76	5	7
25–29	21	3	14
30–34	22	6	27
35–39	16	3	19

Additional observations. When we studied the sections microscopically we had to avoid the tendency to note insignificant alterations.

One indolent-appearing papillary and follicular carcinoma, measuring 0.3 by 0.2 by 0.2 cm., was found in a subject 24 years old. It presented as an opaque focus on gross examination.

In 9 cases there were well-circumscribed but unencapsulated isolated masses of thyroid tissue, averaging 0.1 cm. in diameter, in the perithyroidal fat.*

Three types of ectopic tissue were found within the thyroid. In 2 instances parathyroid glands were found, in 2 instances skeletal muscle, and in 1 instance cartilage.

Lymphocytic infiltrates were found in only 18 glands (13 per cent). In 15 instances a few small aggregations of lymphocytes were scattered through the parenchyma. These collections of lymphocytes were not sufficient to justify a diagnosis. In 1 gland the lymphocytic infiltrates were present in sufficient numbers to warrant a diagnosis of mild lymphocytic thyroiditis. Lymphocytes were sufficiently numerous and the architecture of the glands so disturbed in 2 cases that a diagnosis of moderately advanced lymphocytic thyroiditis could be made.

A single minute focus of squamous metaplasia was found in each of 6 glands. This lesion did not appear to be correlated with age or with any pathologic process.

Comment

To facilitate comparison with the report of Mortensen et al[1] and that of Park et al[2] our cases can be grouped by decades. If this is done, the increase in nodularity with increasing age is strikingly apparent. In the men 20 to 29 years old 8.2 per cent of the thyroids contained nodules. In the men 30 to 39 years old 23.7 per cent were nodular. Our study showed the incidence of nodularity in the third decade of life to be approximately the same as that found by Mortensen et al.[1] We have no explanation for the observation that in our series nodules occurred about twice as frequently in the group aged 30 to 39 years as in the study by Mortensen et al. The discrepancy might be related to the small number of subjects in the 30- to 39-year category in both studies.

Summary

Morphologic observations have been made on the thyroid gland of 137 young healthy men who died unexpectedly. The median weights of the glands increased from 17 Gm. in the 15- to 19-year group to 21.7 Gm. in the 35- to 39-year group.

Thyroid glands without nodules constituted 87 per cent of the glands examined.

Eighteen glands were the site of lymphocytic infiltrates, only 3 of which could justifiably be diagnosed as lymphocytic thyroiditis.

One minute occult carcinoma was found.

The authors acknowledge the coöperation of the Division of Radiological Health, United States Public Health Service, Rockville, Maryland.

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* Repeated episodes of hyperplasia and involution may result in enlargement of such a mass, which might move into the lateral part of the neck and present as a sequestered thyroid nodule.

PRESIDENT'S PAGE

REVISED COMMITTEE STRUCTURE

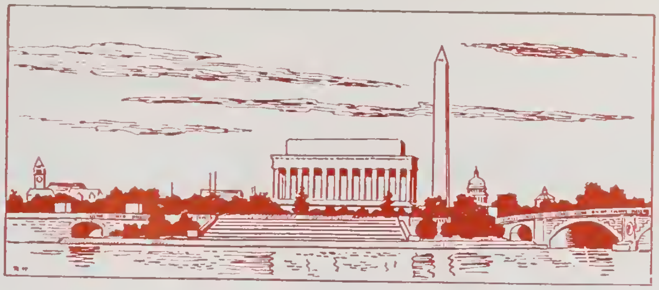
THE NEW CONSTITUTION of the Medical Society attempts to strengthen committee structure and augment their functions. It has become apparent that our Medical Society must coördinate the various medical services available to persons in this unique geographic and political area. The Washington Metropolitan Area encompasses over 2 million potential patients, over 2,000 physicians, many Federal agencies, 3 medical schools, the Health and Welfare Departments, 6 counties, voluntary health agencies, and many other interrelated socioeconomic agencies and factors. In addition, the Medical Society of the District of Columbia is a state component of the AMA.

Our committees for 1965 are divided among 7 Councils, with a member of the Executive Board assigned to each Council for liaison purposes. An outline illustrating the new organization plan will be published when the committee assignments have been completed. Some changes may be difficult to accept because of tradition, but a change at this time seems appropriate. We may have too many or too few committees, but committee activity has to vary according to national problems and community needs. Experience will dictate whether future changes in our organization should be made.

At the outset I endeavored to place each member on the committee he requested. This proved to be impossible. As an example, there were over 50 requests for the Grievance Committee, but only 1 vacancy! Because of our inability to satisfy each member and because of our great need for talent and ability, we have utilized a certain amount of license in selecting members for committees. There is a definite need now in Washington for particular talent.

Individual assets are vital to the functions of the Medical Society regardless of one's specialty or past experience in Medical Society activities. I hope that all of our members will respond to the immediate challenges despite their own preferences.

Paul R. Wilner



EDITORIALS

Heart Association's High School Student Program

Six years ago the Washington Heart Association pioneered a program which was designed to attract bright young people of the community into a career in the health sciences. At that time several social trends had conspired to reduce seriously the number of applicants to medical schools. The low birth rate of the thirties was reflected in the relatively small number of available graduate students just at the time Sputnik galvanized a new interest in the physical sciences. Since there was evidence that career choices were often determined during the high school years, the Washington Heart Association program was designed to present a large group of Washington area high school students with a stimulating series of lectures on the excitement of medical research and practice. From this group 10 to 20 outstanding students were selected by written examination and were then exposed to a summer experience in a medical research laboratory. This program has proved its worth. Many of our prize-winners did go on to study medicine, and for all our students it has been a meaningful experience.

However, each year we evaluate this program to try to meet the needs of the medical community as well as the needs of the society around us. Times have changed. The war crop of babies has reached the graduate school level. Medicine still needs as many outstanding young people as it can recruit, but we have now a much larger pool of good students from which to choose. At the same time the expansion of health services has produced an increasing shortage of young people interested in the so-called paramedical sciences, such as nursing, physical and occupational therapy, dietetics, and laboratory services. Furthermore, many high school students in the Washington area cannot realistically contemplate the lengthy and expensive training required for the doctorate degree.

With this in mind, we have added a new facet to our high school program this year. We are maintaining the format of 3 lecture sessions for about 400 selected Washington area students. They will be given in the D. C. Medical Society's auditorium for 3 successive Saturdays beginning February 6. Each session will be devoted to a discussion of a major cardiovascular disease, such as rheumatic heart disease, coronary artery disease and cerebrovascular disease. In addition to the presentation of clinical and research aspects of these subjects by experienced physicians, there will be a discussion by representatives of the paramedical sciences of the supportive services required for patient care and rehabilitation. Outstanding members of the medical community have agreed to participate in these programs. The students will be made aware of the kinds of training available, the opportunities for rewarding jobs, and the importance of the work done not only by physicians and researchers but also by nurses, therapists, dietitians, laboratory technicians, etc.

Each student will be asked to indicate his or her career interest, and our student winners will be assigned to various kinds of summer training programs in the Washington hospital centers. Of 20 award-winners 15 will work in research laboratories as in past years. Another 5 will work as apprentices in the paramedical areas. Our committee is gratified by the generous response from all our major hospital groups. It is our hope that this new program will continue to stimulate potential physicians and research workers and at the same time will encourage other students to set their career goals toward the paramedical sciences.

Estelle R. Ramey, Ph.D.
Chairman, High School Heart Research Committee, Washington Heart Association

Opinions expressed in contributions to the Editorial Section are those of the writers and do not necessarily reflect the views of the Medical Society of the District of Columbia

R_X for Elderly Health Care

The following Letter to the Editor appeared in *The Evening Star* of December 19, 1964. It was written by our immediate Past President, Dr. Edward W. Nicklas. Your Editorial Board commends it to you for careful reading.

Sir: I wish to thank you for the very thoughtful and understanding editorial "Medicare and the AMA" of December 6 and commend you for its excellent content. After all, the doctors in this country, most of whom are members of the AMA, are not blindly opposed to health care for the aged, as has been falsely projected, but are historically dedicated to the best medical care for every one, regardless of ability to pay.

There have been much confusion, misrepresentation and misinformation as to the reason for the opposition of the AMA to Medicare under Social Security. This opposition is based on a belief that "Medicare" would be inadequate to satisfy the real health needs of the elderly, that it would unnecessarily bring Government between doctor and patient, and that it would seriously threaten the fiscal integrity of the Social Security System itself. No one can accurately estimate what medical services, toward which wage-earners and employers are contributing today, will cost 10 or 15 years from now. This would represent a tax burden on young people, part of which would finance health costs for some millions of elderly who are well able to pay their own medical bills. It is for this reason that Representative Wilbur Mills, Chairman of the House Ways and Means Committee, opposes "Medicare." We doctors in the District of Columbia Medical Society also support this position.

The decision of the AMA to continue to fight for elder care under the existing Kerr-Mills Law is based on the liberal provisions and philosophy of this Federal law. If properly implemented, as it has been in some states, there is no limit to the amount of medical care any state can provide for its senior citizens. The AMA therefore believes that more comprehensive health care programs can be developed under state control than Federal. The Medical Society of the District of Columbia also agrees with this.

In our opinion also the Kerr-Mills Law is not functioning in the District of Columbia as intended in the spirit of this law. The totally indigent in Washington receive good care under the Old Age Assistance part of the law. The program for those covered under that part called Medical Assistance for the Aged is tied to the indigent program in our city and, therefore, health care for the senior citizens of our city is available only if they apply at Public Health Department Clinics or the District General Hospital.

The intent of the Kerr-Mills Law was to preserve the dignity of patients so that our elder citizens could have their medical care available under their own doctors in any hospital of their choice, and that this care should be available to anyone over 65 either permanently or temporarily in need of comprehensive medical care, even though not otherwise indigent. Out-of-hospital care under one's own physician was also intended. Our Committee on Aging, after exhaustive study, has developed a good elder-care program which the Medical Society intends to submit soon to the D. C. Commissioners to consider for implementation under Kerr-Mills.

At this time, however, realistic and factual appraisal of the present situation convinced the members of our Medical Society that another approach to the problem should be considered, and our delegates to the AMA meeting in Miami were instructed by unanimous vote to introduce a resolution calling for development of a program by Congress in coöperation with the AMA, Blue Cross-Blue Shield, commercial insurance companies, and other interested parties, based on the very successful Federal Employees Health Benefit Act. This gives free choice of voluntary prepayment plan, doctor, and hospital.

Our program envisages a very comprehensive coverage of health care needs of the elderly, much broader and much more adequate than so-called "Medicare," and available to everyone over 65 years of age. Government subsidy could be total, partial or not at all, depending on ability to pay. This consideration might conceivably use income tax levels or a simple affidavit, rather than a means test, for eligibility.

Again realistically, our resolution suggested that the method of financing this program be left to Congress as is its constitutional right.

His Work Will Go On

> "To you from falling hands we throw
> The torch; be yours to hold it high."
> —John McCrae

Although the cruel slaying of Dr. Paul E. Carlson, Los Angeles medical missionary, November 24, 1964, at the hands of Congolese rebels concluded precipitously his own humanitarian efforts in that strife-torn country, the work he carried on in his hospital at Wasolo in North Congo will continue. Even before his death, after the hospital had been looted and damaged by rebel forces, Smith Kline & French Laboratories had pledged financial support to reëstablish operations at his mission hospital and to restock the hospital's drug supplies with any of its products. After his death the company confirmed the offer and stated its hope that the mission organization, the Evangelical Covenant Church of America, would soon be able to send a replacement for the martyred physician.

President Walter A. Munns, of Smith Kline & French, said its special interest in Dr. Carlson stemmed from the fact that he sponsored an American medical student, Philip Littleford, of Baltimore, who was broadening his clinical training at Wasolo through the SK & F Foreign Fellowships for Medical Students program. Mr. Littleford, a senior in the Johns Hopkins University School of Medicine, was forced to flee the mission station in August. Mr. Munns was told that the 65-bed hospital at Wasolo was the only one with a doctor in an area the size of Maryland.

Dr. Carlson, known to many Washington physicians, received his medical education at George Washington University, graduating in 1956. Dr. Neel J. Price, an obstetrician on the University staff when Dr. Carlson was a student there, received as a gift from him a Bible when he delivered their first child in 1955. On December 20 past Dr. Price read the Christmas story from this Bible when he participated in the services at the First Church of the Nazarenes. He recalled that Dr. Carlson as a student was President of the School Chapter of the Christian Medical Society.

Dr. Carlson had been stationed at the Wasolo Hospital for a year before his death. He had transferred his wife, Lois, and 2 small children, Wayne, 9, and Lynette, 7, to a safe zone before he returned to the hospital where he felt he was needed despite the risks. The Los Angeles County Medical Association has established the Physician's Aid-Carlson Fund to benefit the wife and children. Donations from the medical profession and the general public are invited. All contributions will be used for the benefit of the Carlson family; expenses will be met by the County Association and the Physician's Aid Association. Checks should be made payable to the Physician's Aid-Carlson Fund and sent to 1234 North Vermont Avenue, Los Angeles 29, California.

A.L.E.

Report on 1964 Clinical Meeting of AMA House of Delegates*

THE LATEST MEETING of the House of Delegates of the American Medical Association convened on Monday, November 30, 1964. As a result of careful planning by the Speaker of the House, Milford O. Rouse of Texas, and his staff, the work proceeded expeditiously, and reference committees were able to start their hearings on Monday afternoon. The streamlining of procedures and reduction of protocol resulted in economies of time which seemed, in the opinion of your delegates, to add greatly to the efficiency of the House.

Early in the meeting appropriate notice was taken of the untimely death of Norman A. Welch, while engaged in his activities as President of the Association, by the adoption of a memorial resolution from the Massachusetts Medical Society.

Donovan F. Ward, who succeeded Dr. Welch as President, appeared before the House for the first time in that capacity. His address to the delegates reaffirmed the Association's opposition to King-Anderson type of legislation and called for renewed intensive effort to prevent the passage of such legislation. His address is published in its entirety in the December 14, 1964 issue of J.A.M.A. (pages 982–5) and is recommended for reading by our membership.

Generally, Dr. Ward's address, which was eloquent, was well received by the House, which later approved a recommendation of the Board of Trustees that an improved educational program relative to the issue of health for the aging be conducted over the next few months. State medical societies were urged to send representatives to 2 conferences to be held in Chicago, December 13 and January 9–10, to plan the educational program and to consider the future implementation and expansion of Kerr-Mills programs.

Resolutions were introduced by the California, Michigan and District of Columbia delegations which could have altered the position of the AMA on health care legislation for the aged, if adopted. The D.C. resolution was "not adopted." No action was taken on the others. Instead, the House adopted a platitudinous resolution submitted by the Reference Committee urging component associations to stimulate state and local governments to seek the fullest possible continuous implementation of existing mechanisms, including

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* This report is a summary of actions of the House of Delegates which met during the 1964 Clinical Meeting of the American Medical Association in Miami Beach, Florida, November 29–December 2, 1964.

Community
Service
Education
Research

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the voluntary health insurance principle, to the end that everyone in need, regardless of age, is assured that necessary health care will be available. Your delegates were not in sympathy with this action.

A resolution calling for the employment on a full-time basis of a professional spokesman for the Association was withdrawn so that your delegates did not have to oppose it. Actually, this matter had been adequately dealt with by the House in June 1964 when it approved a reference committee report which stated that a need for such a spokesman did not exist.

Your delegates spoke against the establishment of a teletypewriter exchange system between state societies. However, discussion in the committee hearing brought out the facts that the cost of tying all 50 societies to the system will be only $1,500; that the rental of 50 machines at $400 per year is $20,000; that no special operators are required, and that the National Headquarters will be responsible for all costs except those for messages actually originating at a state level. It was further brought out that this system is efficient and economical and has many more potential uses than just communication between medical organizations, since any office using the same equipment becomes a part of a national network. Your delegates, under instruction, continued to oppose it but felt that this measure, which was adopted, had a good potential.

The Report of the Commission on the Cost of Medical Care, as rearranged and modified by the Board of Trustees, was approved. The 33 recommendations contained in its report are designed to develop studies which would promote the wisest use of the medical care dollar and aid in the collection of more meaningful data on the cost of medical care. A substantial number of the studies recommended are already under way and others are in the process of being implemented. In its approval of this report the House urged that adequate funds be provided for maximum implementation of the recommendations.

Approval was also given to a report of the Board of Trustees relative to the subject of human reproduction. This report updates the position of the Association in this field, nothing having been done since it was previously considered in 1937. In part, the report states that: (1) An intelligent recognition of the problems that relate to human reproduction, including the need for population control . . . is a matter of responsible medical practice; (2) the medical profession should accept a major responsibility in matters related to human reproduction as they affect the total population and the individual family; (3) . . . physicians must be prepared to provide counsel or guidance . . . or refer patients to appropriate persons; and (4) the AMA shall disseminate information to physicians on all phases of this subject by appropriate means. Coöperation with medically directed voluntary organizations in this field was recommended. The right of the physician to prescribe and the patient to receive advice limited only by the desires of the individual and without coercion was recognized.

A report by the Board of Trustees relative to an increase in dues was unanimously approved inasmuch as the report stated that there was no need for an increase at this time.

A report from the American Medical Association Education and Research Foundation to the effect that 1 out of every 6 medical students, interns and residents in the United States is now receiving financial assistance from the Foundation's Loan Fund should be of interest to our members. Your delegates are each year impressed by the very sizable contributions made to this Fund by various state associations.

James Z. Appel was elected President-elect. He will become President in June 1965. Joseph B. Copeland was elected to the Board of Trustees to fill the vacancy made by Dr. Appel's resignation. Elections are unusual at this midwinter meeting of the House but these were necessitated by the tragic event of last summer mentioned previously.

Your senior delegate would like to compliment his colleague, C. Willard Camalier, Jr., for his introduction of the resolution relative to health care for the aging, which he did at your direction. Although not adopted, the resolution was strongly presented by Willard in a manner that at least stimulated considerable support and made friends for our Society.

Respectfully submitted,
Raymond T. Holden, M.D.
C. Willard Camalier, Jr. M.D.

Health Dept. Notes

Health Education and Information Services

Public Health Education has long been identified with health operational programs and planning. Much that a Department of Public Health seeks to accomplish is related to and dependent upon community acceptance of its goals.

The D. C. Department of Public Health makes considerable use of its health education resources to provide direct and indirect support to its operations. Venereal disease control, the current vaccination drive, the birth control clinics, and other similar activities require direct support in health education. The Department's new Mental Health Plan, participation in the D.C. poverty programs, maternal, infant and child health, and other more generalized activities require continuing support from health education.

The D. C. Health Department has organized its health education and information into 4 groupings. Each is related to the nature of its responsibility.

Community Organizations has a staff of health educators who are assigned individually to such programs as vaccination assistance, rheumatic fever, tuberculosis control, venereal disease control and the mobile screening unit. These educators are responsible for advancing their particular programs in the community through film showings, distribution of health literature, talks and lectures, and other methods of directed action.

Visual Aids is a production unit which designs and constructs exhibits, develops and publishes printed materials (posters, pamphlets, flyers and leaflets), and maintains an audio-visual library of slides and films on topics of health interest. Any operational program in the Department may request the services of this unit. In recent months its output has included a pamphlet series for the birth control clinics; posters, flyers and bumper stickers for vaccination assistance; an exhibit for mental health; and flyers, exhibits and posters for VD control.

Informational Services is the relay channel through which the Department reaches the general public. This section deals with radio, television and the local and national press; provides news and feature material about Department activities; and seeks to maintain and improve the Department's image as an essential and effective public service. It represents the Department as a whole to the public as a whole. The information staff also prepares newsletters and other materials for better internal communication within the Department.

The Behavioral Science Section is concerned with the public as a consumer of Health Department services. This applied research unit studies patient needs and attitudes to determine how programs might be made more effective through design or modification. The unit is currently working in VD control, to see how patient attitudes affect use of clinic services; in vaccination assistance, to ensure a full public response; and in planning of clinic locations, to predict the effect of locale on usage.

Of course, all health education activities are supportive of all departmental programs and also of other health endeavors in the District. In recent months, health education has worked closely with District schools, offering hazards-of-smoking information to teachers and principals; with the cancer, heart, tuberculosis, alcoholism and other agencies; and with the medical, hospital, dental and other professional societies.

Health educational and informational materials produced by the Department of Public Health are offered to physicians in the District for their distribution. A printed listing is available on request. Call 629-3641.

Murray Grant, M.D., D.P.H.
D. C. Director of Public Health

Join the Army Medical Corps Reserve

Physicians who are interested in joining an active reserve unit of the Army Medical Corps are invited to contact the 2290th U. S. Army Hospital, Rockville, Maryland. This unit is commanded by Dr. Joseph J. Wallace (Colonel, Medical Corps, USAR), and when fully staffed will be capable of operating a 1000-bed hospital.

The physicians of this unit are currently engaged in a program to attract about 50 more physicians, to fill vacancies ranging from the grade of captain to lieutenant colonel. Meetings are held on the first and third Thursdays from 8 to 10 p.m. and on the first Sunday of each month; a day's pay is earned for each meeting attended. In addition, members attend summer camp for 15 days each year and receive full pay and allowances.

Physicians of all specialties and general practitioners are needed. Residents and interns fit well into the program, and some individuals

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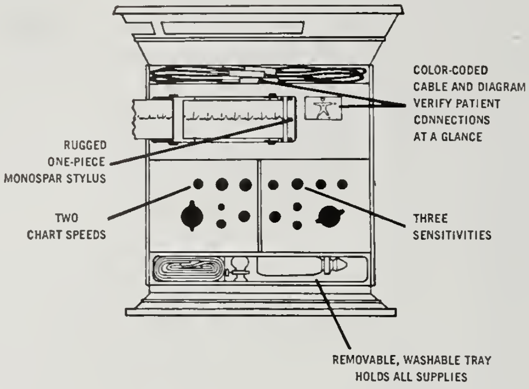
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obtain credit in fulfillment of military obligations. Physicians just returning from active duty may join and continue their military affiliation while functioning as civilian doctors in the local communities.

Doctors who are interested in obtaining more information concerning the 2290th U. S. Army Hospital are urged to telephone Poplar 2-5222, or visit or write the Hospital at the Army Reserve Armory, 1850 Old Baltimore Road, Rockville, Maryland.

Medicolegal Abstracts

In Louisiana a wrongful death action hinged upon the conflicting testimony of the attending physician and 2 specialists. The specialists never examined the patient but testified from the hospital records and medical charts. The appellate court ruled that this testimony was admissible and even carried more weight, because the records were certified by the hospital superintendent and because the attending physician acted in ignorance of the patient's past history and with an inaccurate version of the impact suffered.

Comment: Accurate charts are necessary. The house officer's history on the hospital chart may be given great weight, as it was here, so we should study it carefully before initialing it. That initial or signature may later be construed as a certification of its accuracy.

In Illinois, an insurance company disclaimed liability for damages, injuries, and 1 death in an airplane crash. It said that the pilot had not passed a medical examination within the preceding 24 months as required by the CAA. In fact, however, he had been examined within the requisite time. The doctor or his secretary had inadvertently entered the wrong date upon the certificate. The doctor's office ledger and appointment book supported the correct date and were given greater weight in the decision.

Comment: This physician was both careful and careless, leaving the court to decide between the 2 dates. This is another case showing the need for strict accuracy in all our record-keeping.

* * *

Several decisions in 1964 hinged upon the weight of testimony of various medical witnesses.

In Louisiana, a court held that the testimony of the treating physician, a general practitioner, had greater weight than that of the consulting specialists. Two rules governing the weight of testimony were noted: that testimony of specialists as to matters falling within their own fields is entitled to greater weight than that of general practitioners; that the treating physician's opinion is worth more than that of an expert who has not had the benefit of the long, close, and frequent contact with the patient. The court decided to utilize the latter rule in this case.

A Kentucky court ruled that the testimony of a radiologist does not carry more weight than that of an orthopedic surgeon. It stated, in fact, that an orthopedist ". . . has to be a pretty fair hand at reading X-rays." Although he may be more qualified to interpret the films, a radiologist is not more qualified to relate these findings to the specific physiologic significance and effect.

In Louisiana, an intermediate appellate court ruled that opinions formed near the time of injury have more weight than those formed later. The interval between the injury and the claimant's request for further medical opinion was 6 years. That request was denied.

Comment: All these decisions are interesting to those who are called upon to testify in court. Evidently the rules concerning the relative weight of evidence by different doctors are not fixed.

* * *

Several cases in 1964 bore upon the admissibility of medical evidence.

In New Mexico a general practitioner testified to the per cent of vision a plaintiff had lost in an accident. The court held that his testimony was admissible. Whether the testifying doctor is a specialist or not may affect the weight given his evidence, but not its admissibility.

In Pennsylvania a psychiatrist was willing to testify that one of the witnesses was a psychopath capable of lying. The court would not accept the testimony, however, since it was based solely upon observations made in the courtroom. The psychiatrist had never examined the man. The court held that testimony based on such observation alone would exert a ". . . great strain on credulity. . . ."

The inadmissibility of textbooks as evidence was stated again by the Supreme Court of Washington. Texts can be used, though, to test the knowledge of an expert. If he does not accept

PARTICIPANTS IN FOURTH ANNUAL DAVIDSON LECTURE ON RELIGION AND MEDICINE

The D. C. Medical Society's Committee on Liaison with the Clergy invited 2 guest speakers to present the topic, "Sex in Today's Culture—A Concern of Religion and Medicine" at the Washington Hebrew Congregation, December 9, 1964. They were: The Reverend Tom Faw Driver, Ph.D., Associate Professor of Christian Theology, Union Theological Seminary, New York, and James A. Knight, M.D., Associate Dean, Tulane University School of Medicine, New Orleans.

Seated above in the company of officers of the Society, Committee members, and representatives of the clergy are (left to right): Dr. Nicholas Ionedes, Dr. Josephine E. Renshaw, First Vice President of the Medical Society, and Drs. Elizabeth S. Kahler, Driver, Knight, and Bernard Notes.

Standing (left to right): Dr. Charles W. Thompson; Dr. Victor R. Alfaro, Chairman, Executive Board; Dr. Edward W. Nicklas, President of the Society; the Rt. Reverend E. Robert Arthur, The Tribunal, Archdiocese of Washington; Rabbi Norman Gerstenfeld of the Washington Hebrew Congregation who extended the invitation to hold the Lecture in his synagogue; Dr. Arthur A. Morris, Chairman of the sponsoring Committee; Dr. James Hawfield; Dr. Berkley C. Hathorne, Director, Washington Pastoral Counseling Service; Canon Richard Williams of the Episcopal Church House at Mount St. Alban's; and Dr. Robert J. Wetmore.

Those not otherwise designated as clergymen or officers of the Society are members of the Committee on Liaison with the Clergy.

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their statements it is up to the opposite side to prove the authoritativeness of the text.

A U. S. Court of Appeals, however, made a somewhat different ruling regarding textbooks. It allowed them in a disability proceeding under the Social Security Act, noting that the Act implicitly authorizes consideration of this type of evidence. Not only were the texts used to expand and explain medical reports and opinions but to refute a doctor's claim that Class I and Class II heart impairment caused the claimant to be incapacitated and unable to work.

Comment: These 2 cases seem to conflict directly. Perhaps a thorough reading of the Social Security Act would resolve the difference.

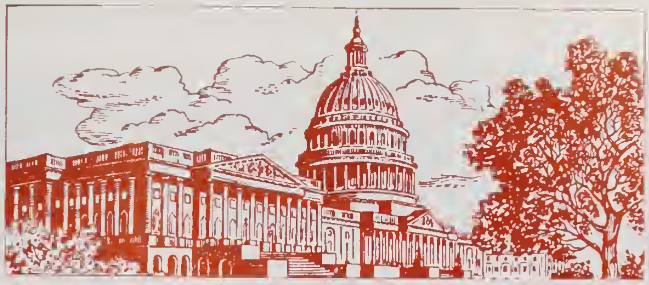
In Texas, a court ruled that a physician may not present an opinion based solely upon the history given by the patient. The question arose in a case in which the examination was made for the purpose of testifying for the patient. The court felt that such a history might simply be a self-serving declaration. It did admit the testimony of the same physician based upon his physical examination and his study of the hospital records. It was of the opinion that the history given at the time of hospitalization might be more accurate, since the main object then was to get well.

Comment: This seems to be a point worth remembering in examinations for compensation proceedings.

M-L

A ruling in a Federal trial court in Kentucky is reassuring. The treating physicians testified that the patient was disabled by his pulmonary disease. Two other doctors reported pulmonary func-

(Continued on page 94)



NEWS & PERSONALS

Meetings

The Instrument Society of America, Washington Section, will hold a meeting, March 1, in Conference Room 3, Building 31, at the National Institutes of Health in Bethesda, beginning at 8 p.m. The speaker will be Marie U. Nylen, D.D.S., a staff member of the Laboratory of Histology and Pathology at the National Institute of Dental Research. Her subject will be "Electron Microscopy Today." All interested physicians are cordially invited to attend.

The American College of Physicians will hold its **Golden Anniversary Session** in Chicago, March 22–26, at the Conrad Hilton Hotel. Some 300 physicians and other medical scientists will participate in the 5-day scientific program.

At the opening plenary session, March 22, Dr. Thomas M. Durant, of Philadelphia, President of the College, will give a historical review of the College, which was founded in 1915. Three winners of the ACP's Phillips Award will appear on the program: Dr. William B. Castle, of Boston, award-winner in 1933, will talk on pernicious anemia; Dr. Edwin B. Astwood, also of Boston, 1949 award-winner, will discuss thyroid disorders; and Dr. Cecil J. Watson, of Minneapolis, 1957 medalist, will present a paper on metabolism.

At the Annual Business Meeting of the College, March 25, Dr. A. Carlton Ernstene, of Cleveland, will take office as President for 1965–66.

The Washington Psychiatric Society will meet in the Medical Society's auditorium on March 26 at 8:30 p.m. At this meeting Dr. Daniel Blain, President of the American Psychiatric Association, will address the membership. Dr. Blain is Director of Psychiatric Planning and Development at the Institute of Pennsylvania Hospital in Philadelphia. The Presidential Address is an annual event of the Society.

The Heart Association of Northern Virginia, Inc. and the Washington Heart Association are again co-sponsoring a **Cardiac Symposium** to be held on March 31, 1965 at the Marriott Twin Bridges Motor Motel on the Virginia side of the 14th Street Bridge. There will be no registration fee. Registration will begin at 8:00 a.m.; the sessions will open at 9:00 a.m. and close at 4:30 p.m.

Speakers on coronary artery disease will include Dr. William B. Kannel, of Harvard University; Dr. Oglesby Paul, Passavant Memorial Hospital, Chicago; Dr. Donald S. Fredrickson and Dr. Samuel M. Fox, both of the National Institutes of Health, Bethesda; and Dr. Thomas N. James, Henry Ford Hospital, Detroit. Speaking on the subject of rheumatic fever will be Dr. Catherine A. Neill, of Johns Hopkins University, and Dr. Milton S. Saslaw, of Miami, Fla.

The Second Congress on Environmental Health Problems will be sponsored by the American Medical Association at The Drake in Chicago, April 26 and 27, with some 500 representatives from medicine and allied fields expected to attend. The theme of the Congress is "Population, Environment and Health." Further information may be obtained by writing to the Department of Environmental Health, AMA, 535 North Dearborn Street, Chicago, Ill., 60610.

The Department of Preventive Medicine and Public Health of Howard University College of Medicine will offer a 1-week training course in Environmental Health and Safety in Hospitals and Nursing Homes, April 26–30. The course, co-sponsored with the D. C. Department of Public Health and the National Capital Area Environmental Health Association, is designed

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for professional personnel who have planning, control and regulatory responsibilities for hospitals and nursing homes.

The agenda will be concerned with medical care and implications for environmental controls, legal aspects of hospitals and nursing homes, training and utilization of personnel, housekeeping and maintenance, and patient accident causes and their control.

Tuition will be $110.00, but a number of traineeships and per diem stipends are available for professional health workers. Applications and information may be obtained from Mr. Bailus Walker, Jr., Director of Short-term Training, Department of Preventive Medicine and Public Health, Howard University College of Medicine, Washington, D. C. 20001.

General News

The Mental Retardation Branch, Division of Chronic Diseases, U. S. Public Health Service, is offering a **Senior Clinical Traineeship Program** designed to provide opportunities for qualified physicians to obtain additional training in the field of mental retardation. Major emphasis will be on the clinical management of mentally retarded patients, and also experience and training in associated areas. Support for basic residency training is not available under this Program.

Stipends of $6,000 to $10,000 per year, plus a $500 allowance for each dependent, are available. Information and application forms may be secured by writing to Senior Clinical Traineeships, Mental Retardation Branch, Division of Chronic Diseases, U. S. Public Health Service, Washington, D. C. 20201.

The American Association of Blood Banks has issued a list of blood banks which have been accredited by the Association. In the Washington Metropolitan Area the accredited blood banks are located at the following hospitals and institutions: District of Columbia General, Doctors, Freedmen's, Providence and Sibley Memorial Hospitals, the Washington Hospital Center, and the Washington Sanitarium and Hospital; Holy Cross Hospital, Silver Spring, Md.; the National Institutes of Health Clinical Center, Suburban Hospital, and U. S. Naval Medical School, in Bethesda, Md.; Alexandria, Arlington, and Fairfax Hospitals, in nearby Virginia.

Dr. Oscar B. Hunter, Jr. is Chairman of the AABB Inspection and Accreditation Committee. Serving with him are physicians from all sections of the United States. Among them is Dr. C. Barrie Cook, of Fairfax, Va., an Associate member of the D. C. Medical Society.

A teletypewriter network linking the American Medical Association headquarters office with the headquarters of state medical societies was approved by the AMA House of Delegates during the Clinical Convention in Miami, November 30-December 2. The equipment for the D. C. Medical Society was delivered the last week in December and has been placed in operation.

The AMA is paying the cost of installing the equipment at its headquarters and at the participating Society offices, at a cost estimated at $1,500. The AMA will also pay rental costs for all the equipment involved, estimated at $20,000 a year. Cost of transmitting messages will be paid by the organization originating the message.

The Section on Physical Medicine and Rehabilitation of the D. C. Medical Society elected officers in October. They are:

Dr. Charles S. Wise, *Chairman*; Dr Margaret M. Kenrick, *Vice Chairman*; Dr. Isadore Levin, *Secretary*; and Dr. David A. Zohn, *Treasurer*.

Drs. Kenrick and Levin were reëlected to office.

Georgetown University School of Medicine has been awarded a contract of $47,300 to coöperate with Public Health Service scientists in a joint search for a virus of human breast cancer. Dr. Robert J. Coffey, Head of the Department of Surgery at Georgetown, and Dr. William F. Feller, Assistant Professor of Surgery, are working with Dr. W. Ray Bryan, Associate Scientific Director for viral oncology and his staff at the National Cancer Institute. The research is being done at Sibley Memorial Hospital, where Dr. Feller is director of surgical training.

Three nearby County Medical Societies began the year with new officers. They are:

Montgomery County (Maryland) Medical Society:

Dr. John P. Haberlin, *President*; Dr. Seruch T. Kimble, *Vice President*; Dr. Carolyn S. Pincock, *Secretary*; and Dr. Robert G. Angle, *Treasurer*.

All of these physicians are practicing in Silver Spring, except Dr. Angle, who has offices in Bethesda.

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Prince Georges County (Maryland) Medical Society:

Dr. Frederick E. Musser, Hyattsville, *President*; Dr. William A. Holbrook, College Park, *Vice President*; Dr. Henry R. Wolfe, Hyattsville, *Secretary*; and Dr. Max M. Herzberg, Seat Pleasant, *Treasurer*.

Fairfax County (Virginia) Medical Society:

Dr. John E. Prominski, Arlington, *President*; Dr. Robert Guillaudeu, Falls Church, *President-elect*; Dr. Donald S. Thorn, Annandale, *Vice President*; Dr. C. Barrie Cook, Fairfax, *Secretary*; and Dr. Mario E. Espinola, Fairfax, *Treasurer*.

Drs. Cook, Haberlin, Herzberg, Pincock and Wolfe are Associate members of the D. C. Medical Society.

Dr. Stanley F. Yolles has been appointed **Director of the National Institute of Mental Health.** He succeeds Dr. Robert H. Felix, who retired, October 1. Dr. Yolles has served as Acting Director and Deputy Director of NIMH during the past year. A graduate of New York University Bellevue Medical Center, he holds an M.A. degree from Harvard University and the degree, Master of Public Health from Johns Hopkins University.

Dr. R. H. Kampmeier, of Nashville, Tenn., was installed as **President of the Southern Medical Association** at its Annual Meeting in Memphis, Tenn., November 16–19. Dr. Kampmeier has served as Editor of the *Southern Medical Journal* since 1954.

Personals

Dr. A. B. C. Knudson, Director of the Physical Medicine and Rehabilitation Service, Veterans Administration Central Office, has been appointed General Chairman of the 1965 Annual Meeting of the Association of Military Surgeons of the United States, which will be held in November. Dr. Knudson, an Associate member of the D. C. Medical Society, is a Past President of the American College of Physical Medicine and Rehabilitation. He was General Chairman of the Association's convention in 1958.

Dr. Everett J. Gordon has been appointed a consultant for the Question and Answer Department of *The Journal of the American Medical Association* in the field of orthopedic surgery, with special reference to low back disorders. Dr. Gordon was invited to show his exhibit, entitled "Acute Low Back Disorders," at the Annual Meetings of the AMA in Atlantic City in 1963 and in San Francisco in 1964, also at the Clinical Meeting in Miami Beach, Fla., last December.

Dr. Roy Lyman Sexton was one of 5 alumni of Central High School who received Certificates of Distinction at the Alumni Association's 56th Annual Reunion, held December 26 at the Equitable Life Insurance Building. He was a member of the Class of 1912.

An internist, Dr. Sexton is a graduate of Georgetown University School of Medicine. In 1960 he was honored by the District Red Cross Chapter for 35 years of volunteer service. Dr. Sexton has contributed generously of his time and resources to many projects in behalf of both the community and the profession in the District of Columbia.

Dr. George P. Blundell has been appointed for a 5-year term to the Council of the Southern Medical Association. The appointment was made by Dr. R. H. Kampmeier, of Nashville, Tenn., President of the Association.

Dr. Harold M. Hobart has accepted an appointment on the Advisory Committee of School Health Education Study, a research project sponsored by the Samuel Bronfman Foundation of New York City. Director of the Study is Miss Elena M. Sliepcevich, with offices at 1201–16th Street, N.W.

Dr. John W. McTigue was reëlected President of the Prevention of Blindness Society of Metropolitan Washington at a meeting of the Board of Trustees, November 20.

Dr. Jacob J. Weinstein was reëlected a Trustee of the American College of Gastroenterology at its Annual Meeting in New York City, October 18. Dr. Milton J. Matzner, of Brooklyn, N. Y., assumed the presidency of the College at the meeting. The new President-elect is Dr. Maxwell R. Berry, of Atlanta, Ga.

Dr. Daniel F. Lynch, dental surgeon of Washington, has added another award to many others conferred upon him. On December 8 he received the New York University Memorial Award for outstanding contributions to oral

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1. Stoll, L. J.: The Use of Trifluoperazine ['Stelazine'] in General Practice, M. Press *243*:578 (June 29) 1960.

Smith Kline & French Laboratories, Philadelphia

surgery. The presentation was made by Dean Raymond J. Nagle of the New York University College of Dentistry at the annual dinner of the Bellevue, N. Y. Hospital Oral Surgery Alumni Society. Dr. Lynch, an Associate member of the D. C. Medical Society, is President of the American Society of Oral Surgeons.

Dr. Ernest A. Gould, senior attending surgeon at the Washington Hospital Center, was recently reëlected unanimously President of the Medical Staff. Other officers elected were: **Drs. Charles W. Ordman and Garnet W. Ault**, Vice Presidents; **Drs. Frank G. MacMurray and William E. Bageant**, Secretaries; and **Dr. George J. Cohen**, Treasurer. Dr. Cohen is an Associate member of the D. C. Medical Society.

The Washington Sanitarium and Hospital in Takoma Park, Md. reëlected **Dr. Wilfred W. Eastman** President of its Medical Staff. **Dr. W. C. Swatek** was elected Vice President. Both are Associate members of the Medical Society of the District of Columbia.

Dr. James E. Fitzgerald has been elected to the Board of Directors of Riggs National Bank. He is Director of University Health Services at George Washington University.

Dr. Charles Stanley White has relinquished his membership on the Board to become an Advisory Director.

Obituaries

Richard Lee Silvester, B.S., M.D., F.A.C.S.

(1890–1964)

Dr. Richard Lee Silvester, who had practiced obstetrics in Washington for almost 50 years, died, November 23, 1964 at his home, 3140 Klingle Road, N.W., where he also maintained his offices.

Dr. Silvester was born in Aquasco, Md., October 6, 1890, to Richard W. and Lucy Lee Bowen Silvester. He attended the public schools in College Park, Md., and enrolled at the University of Maryland where his father was President. He received his Bachelor of Science degree in 1908. In 1914 he graduated in medicine from Johns Hopkins University and interned at Johns Hopkins Hospital for 2 years. He also trained for 2 years in obstetrics at the Baltimore Hospital for Women of Maryland.

Dr. Silvester began his practice in the District of Columbia in 1918. He served on the staff of Columbia Hospital for Women as senior attending in obstetrics.

During World War I he was a Lieutenant in the Navy Medical Corps.

Dr. Silvester was elected to Active membership in the D. C. Medical Society in 1918 and became a Life member in 1958. He was a Fellow of the American College of Surgeons, a member of the American Medical Association and the Washington Gynecological Society. He was a member of St. Alban's Episcopal Church.

He leaves his wife, Mrs. Josephine S. Silvester, of the home address, and a daughter, Mrs. Allen Kirkpatrick, 5019 Sedgwick Street, N.W.

Augustus Clagett Gray, M.D.

(1889–1964)

It seems strange for me to be writing about the death of Dr. Augustus Clagett Gray whom I had known for so many years. I had seen him such a short time ago. In fact, the day of his death, November 25, 1964, I saw him in his office where he carried on as usual. Late that night he was gone.

Dr. Gray was a quiet, modest man. Yet his career belied these characteristics. A general practitioner, affectionately regarded by his patients, a soldier who served with distinction in 2 wars, and a citizen of unimpeachable integrity, he was held in the highest regard by those privileged to know him.

Dr. Gray was born in Brownsville, Maryland on August 21, 1889. His early education was obtained in Hagerstown where he attended high school. He entered George Washington University School of Medicine in 1908, receiving his degree 4 years later. He interned at Sibley Memorial Hospital, 1912–13 and served his residency at the same institution, 1913–14.

He had been practicing in Washington for 4 years when World War I broke out. He went overseas in June, 1917 as First Lieutenant in the Army Medical Corps. Upon arrival abroad he was assigned to the 15th Scottish Division of the British Army. He was wounded, August 28, 1917 and promoted to Captain before his discharge. Further promotions came in 1924, when he was made Major, and in 1929, when he became Lieutenant Colonel.

He was called to active duty as Medical Director of the District of Columbia Selective Service on November 13, 1940. In February 1942 he was promoted to Colonel and appointed Deputy Director of Selective Service.

Among his awards were the Purple Heart, Army Commendation Medal, and service ribbons.

Following his discharge from the Army, December 23, 1946 he entered practice again, but in 1948 he became Medical Advisor to Group Hospitalization and Medical Service on a part-time basis, a post he held until his death.

Among the offices to which he was elected in the Medical Society of the District of Columbia were that of a member of the Executive Committee from 1935 to 1938 and Vice President in 1947. He became a Life member of the Society in 1955. He was a Past President of the Washington Medical and Surgical Society. Other organizations of which he was a member were the American Medical Association, Southern Medical Association, American Society of Anesthesiologists, and the George Washington University Medical Alumni Association.

Survivors are his wife, Mrs. Evelina Gray, of the home address, 3031 Sedgwick Street, N.W.; a sister, Miss Lillian Y. Gray, of Washington; a brother, Mr. Joseph A. Gray, Dickerson, Md.; and a nephew, Mr. Charles A. Gray.

The community has suffered a distinct loss in the passing of this kindly and dedicated man.

Theodore Wiprud

Charles Jerome Everding, M.D.

(1924–1964)

Dr. Charles J. Everding, practicing physician in the Bethesda, Md. area, died at his home in Berlin, Md., December 6, 1964.

Dr. Everding was born in Brooklyn, N. Y., January 5, 1924. He received his medical degree from George Washington University in 1950 and interned at the University Hospital the following year. He was a resident physician at Mt. Alto Veterans Administration Hospital from 1951 to 1952. He returned to the University Hospital for a year's postgraduate training in physical medicine and spent still another year in medicine at Mt. Alto Hospital.

Licensed in both the District of Columbia and Maryland, Dr. Everding had recently closed his offices at 4401 East-West Highway, Bethesda, and moved to Berlin, where he planned to resume his practice of internal medicine. He was on the staff of both George Washington and Suburban Hospitals.

Dr. Everding was an Associate member of the Medical Society of the District of Columbia since 1959 and an Active member of the Montgomery County Medical Society. He also held membership in the American Medical Association, the Medical and Chirurgical Faculty of Maryland, and the George Washington University Medical Alumni Association.

Surviving him is his wife, Mrs. Sarah Everding, of Berlin, Md.

Acute Radiation Nephritis—Mostofi

(Continued from page 67)

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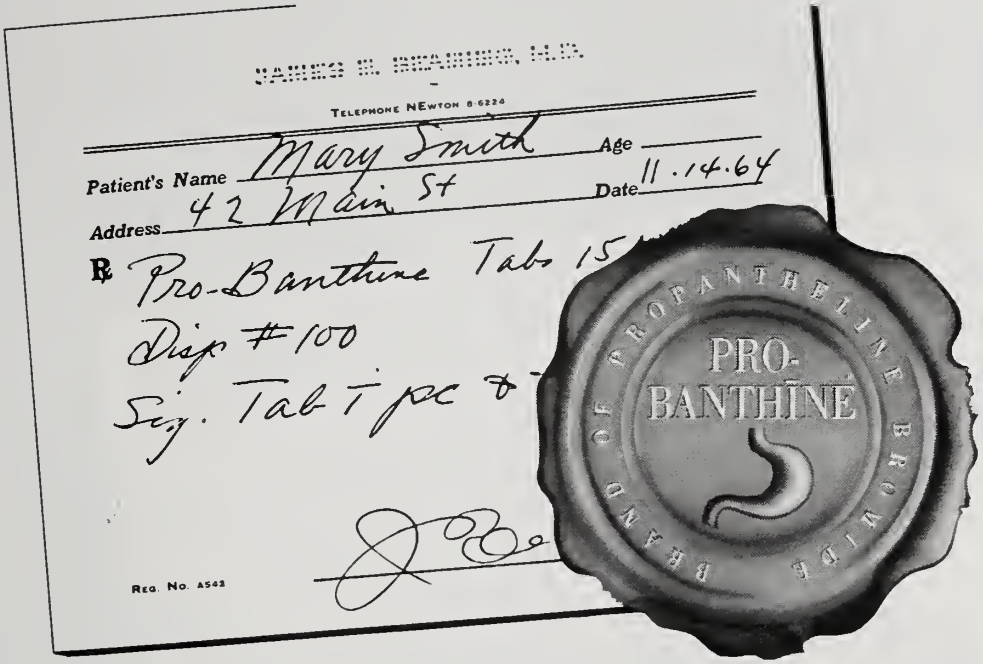
Medicolegal Abstracts

(Continued from page 86)

tion studies which were nearly normal. On this basis the Hearing Officer (Social Security) ruled against the claimant. The court, however, asked for expert testimony regarding the patient's physical capacity for resistance and adaptability and degree of impairment. These opinions bore out those of the treating physicians.

Comment: We may hope that this indicates the court's recognition of the value of a full medical appraisal as opposed to laboratory and test results alone.

Robert R. Montgomery, M.D.



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Dose: One or 2 tablets every 3 or 4 hours.

Contraindications: Do not use in patients with glaucoma or in elderly patients with prostatic hypertrophy.

Precautions: With therapeutic dose, usually no side actions are observed. However, in occasional patients, dryness of mouth, and blurred vision may be encountered. Should these symptoms occur, the dose should be reduced. Should soporific action or sedation be encountered, such patients should be cautioned against driving an automobile or operating machinery.

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- **reduce fever**
- **stop excessive nasal secretions**
- **without unwanted diaphoresis**

(especially important for ambulant patients)

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Indications: Urinary tract infections caused by gram-negative and some gram-positive organisms.

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Precautions: As with all new drugs, blood and liver function tests are advisable during prolonged treatment. **Pending further experience, the drug should not be given in the first trimester of pregnancy. Because it is metabolized in the liver and excreted through the kidneys, it must be used cautiously in patients with liver disease or severe impairment of kidney function.** The dosage recommended for adults and children should not arbitrarily be doubled unless under the careful supervision of a physician.

Dosage: Adults: 2-4 Gm. daily by mouth in divided doses. An initial daily dosage of 4 Gm. (2 Caplets of 500 *mg.* q.i.d.) is recommended for 1-2 weeks. Thereafter, if further treatment is indicated, dosage may be reduced to 2 Gm. daily. Children may be given approximately 25 *mg.* per pound of body weight per day, administered in divided doses. The dosage recommended above for adults and children should not arbitrarily be doubled unless under the careful supervision of a physician. Until further experience is gained, infants under 1 month should not be treated with the drug.

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Highly effective in both acute and chronic urinary infections

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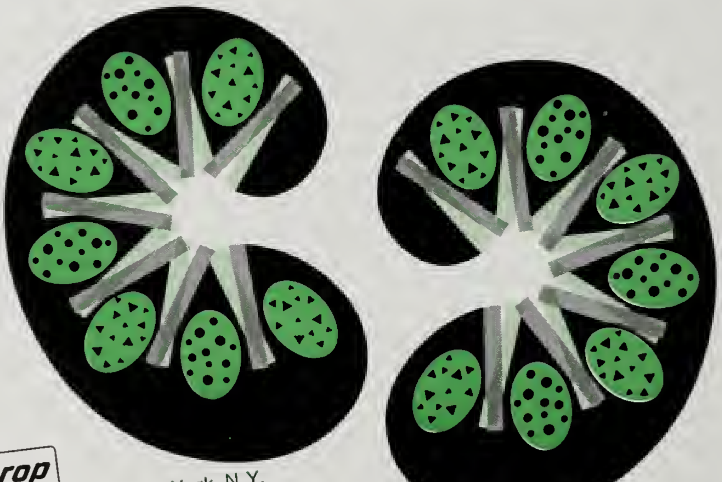

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* AMA Council on Foods and Nutrition: The Regulation of Dietary Fat, *JAMA* 181:411-423 (August 4, 1962).
AMA Council on Foods and Nutrition: Composition of Certain Margarines, *JAMA* 179:719 (March 3, 1962).

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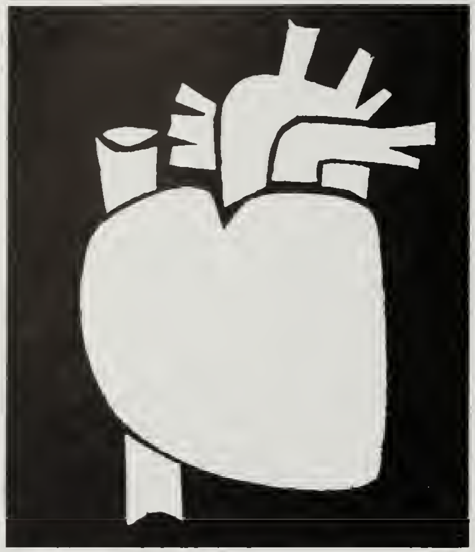

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BOOKS RECEIVED

Acknowledgment is made of the following books which have recently been received.

Ciba Foundation Colloquia on Endocrinology, volume 15. Aetiology of Diabetes Mellitus and Its Complications. Edited by MARGARET P. CAMERON, M.A., AND MAEVE O'CONNOR, B.A. Price, $12.50. Pp. 405, with 85 illustrations. Boston: Little, 1964.

Ciba Foundation Study Group No. 18. Brain—Thyroid Relationships with Special Reference to Thyroid Disorders. Edited by MARGARET P. CAMERON, M.A., AND MAEVE O'CONNOR, B.A. In honour of Professor S. Artunkal. Price, $1.95. Pp. 117, with 28 illustrations. Boston: Little, 1964.

Doctor's Easaccount Record System—Disbursements—Income. Price, $9.50 the set; singly, Disbursements, $4.00; singly, Income, $5.50. Philadelphia: Saunders, 1964.

Clinical Neurology. FRANK A. ELLIOTT, M.D., F.R.C.P. Price, $12.50. Pp. 688, with 171 illustrations. Philadelphia: Saunders, 1964.

The First Twenty Years of The University of Texas M.D. Anderson Hospital and Tumor Institute. Price, $7.50. Pp. 564, illustrated. Houston: The University of Texas M.D. Anderson Hospital and Tumor Institute, 1964.

Emergency Treatment and Management, 3rd ed. THOMAS FLINT, JR., M.D. Price, $8.75. Pp. 686, illustrated. Philadelphia: Saunders, 1964.

Pediatric Procedures. WALTER T. HUGHES, JR., M.D. Price, $7.50. Pp. 208, illustrated. Philadelphia: Saunders, 1964.

Textbook of Pediatrics, 8th ed. Edited by WALDO E. NELSON, M.D., D.Sc. With the Collaboration of 85 Contributors. Price, $18.00. Pp. 1636, with 471 figures and 144 tables. Philadelphia: Saunders, 1964.

Report of the Commission on Drug Safety. Price, $5.00. Pp. 228. Washingto, D. C.: Federation of American Societies for Experimental Biology, 1964.

Report of the State of Maryland Commission to Study Hospital Costs to The Honorable J. Millard Tawes, Governor of Maryland. Pp. 114, plus statistical supplement. Baltimore: Commission to Study Hospital Costs, 1964.

Ciba Foundation Symposium: Cellular Injury. Edited by A.V.S. DE REUCK, M.Sc., D.I.C., A.R.C.S., AND JULIE KNIGHT, B.A. Price, $12.00. Pp. 403, with 81 illustrations. Boston: Little, 1964.

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Arthralgen and Arthralgen-PR are indicated in the management of rheumatoid arthritis, acute gouty arthritis, rheumatoid spondylitis, osteoarthritis, bursitis, fibrositis, and neuritis. Arthralgen may be used for analgesia in colds, flu, and various myalgias.

DOSAGE: One or two tablets four times a day. After remission of symptoms dosage should be reduced to the minimum maintenance level.

SIDE EFFECTS: Nausea, GI upset, or mild salicylism may rarely occur. Symptoms of hypercorticoidism dictate reduction of dosage of Arthralgen-PR.

PRECAUTION: Reduction in dosage of Arthralgen-PR given over a long period should be gradual, never abrupt.

CONTRAINDICATIONS: Hypersensitivity to any ingredient.

As with any drug containing prednisone, Arthralgen-PR is contraindicated, or should be administered only with care, to patients with peptic ulcer, tuberculosis, nephritis, diabetes mellitus, acute psychoses, Cushing's syndrome (or Cushing's disease), overwhelming spreading (systemic) infection, or predisposition to thrombophlebitis.

Arthralgen-PR is generally contraindicated in patients with uremia and viral infections, including poliomyelitis, vaccinia, ocular herpes simplex, and fungus infections of the eye. It is also contraindicated in patients with chicken pox or susceptible persons exposed to it.

SUPPLY: Arthralgen (white, scored) and Arthralgen-PR (yellow, scored) tablets are available in bottles of 100 and 500.

REF: 1. Boreus & Sandberg, ACTA. PHYSIOL. SCAND., 28:266, 1953. 2. Cohen, et al.: J.A.M.A., 165:225, 1957.

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March 14–17: D. C. Dental Society—Postgraduate Clinic. Shoreham Hotel, Washington. Address: Mrs. Doris Hansen, Executive Secretary, 1835 Eye Street, N. W., Washington, D. C. 20006

March 19–21: American Society of Internal Medicine. Conrad Hilton Hotel, Chicago. Address: Mr. Albert V. Whitehall, *Executive Director*, 3410 Geary Blvd., San Francisco 18, Calif.

March 22–26: American College of Physicians. Chicago. Address: Dr. Edward C. Rosenow, Jr., *Executive Director*, 4200 Pine Street, Philadelphia 4, Pa.

March 28–April 1: International Anesthesia Research Society. Mayflower Hotel, Washington, D.C. Address: Dr. A. William Friend, Executive Secretary, 227 Wade Park Manor, Cleveland 6, Ohio

March 29–April 1: Southeastern Surgical Congress. Statler Hilton Hotel, Washington, D. C. Address: Dr. A. H. Letton, Secretary-Director, 340 Boulevard N. E., Atlanta, Ga.

April 5–8: 38th Annual Spring Congress in Ophthalmology. Gill Memorial Eye, Ear and Throat Hospital, Roanoke, Va. Address: Superintendent, Box 1789, Roanoke, Va.

April 5–8: Industrial Medical Association. Americana Hotel, Bal Harbour, Fla. Address: Mr. Clark D. Bridges, *Managing Director*, 55 East Washington Street, Chicago 2, Ill.

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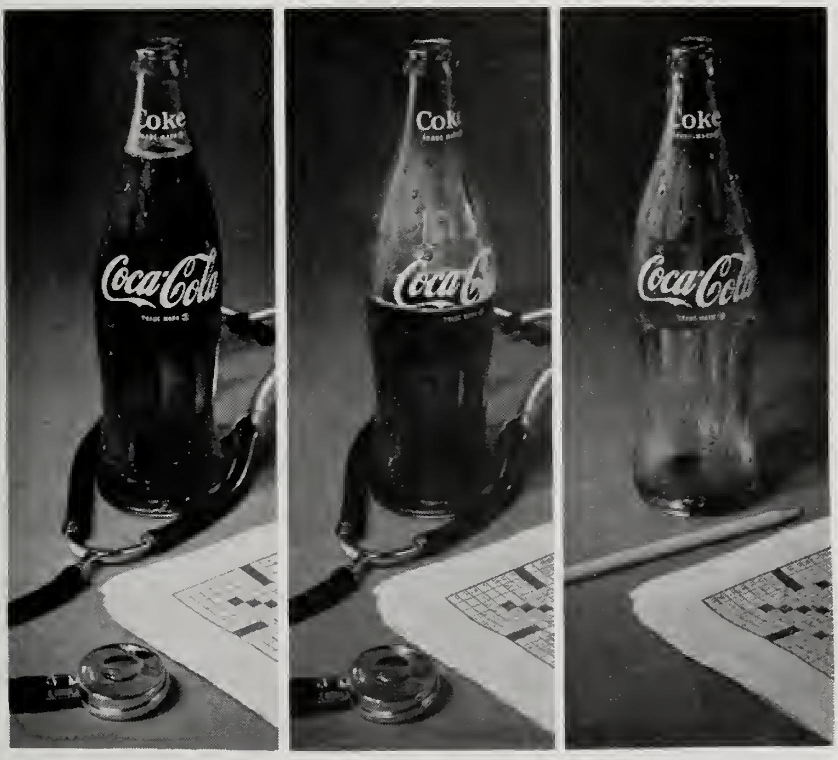

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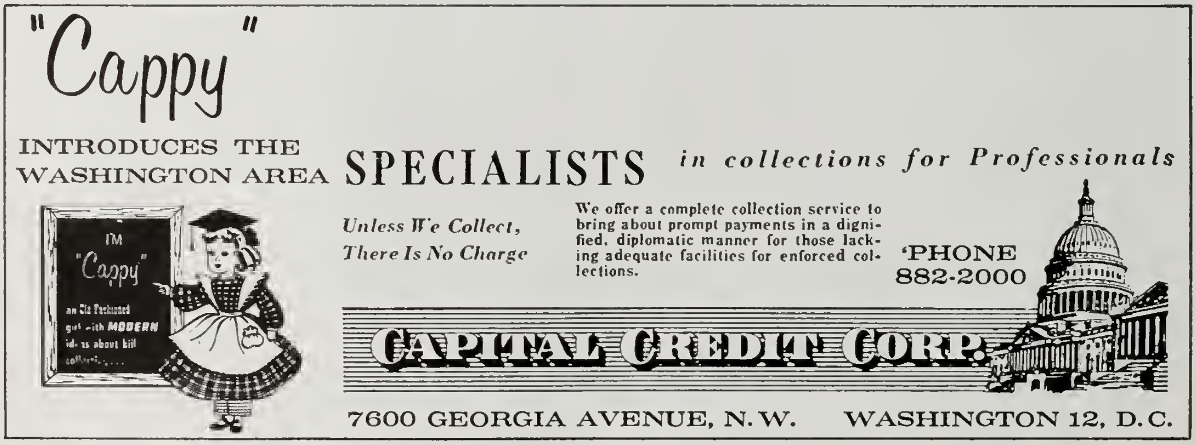
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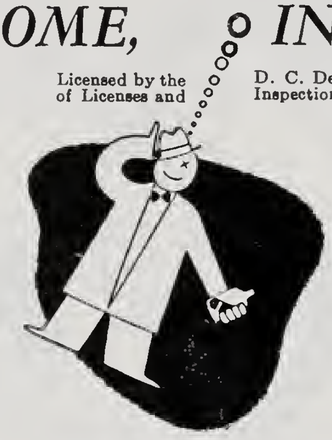

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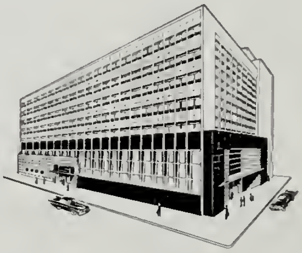

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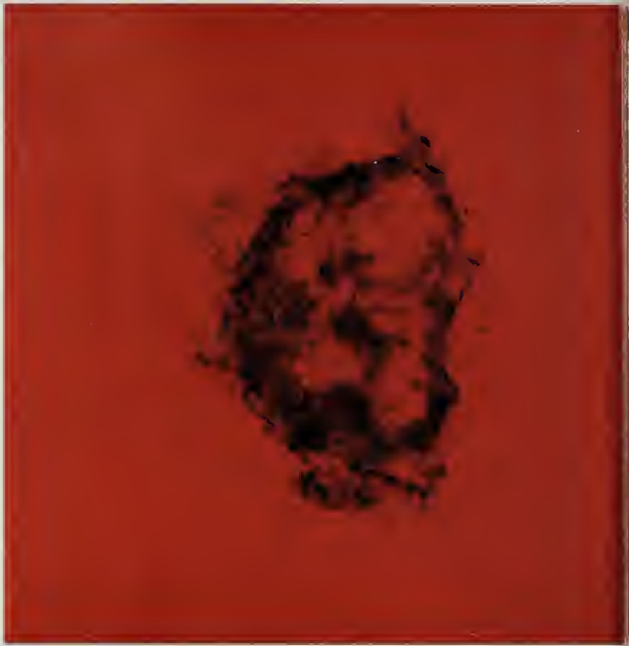
T–text

kills Haemophilus influenzae in respiratory infections

Electron micrograph of normal H. influenzae *organism.*



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Contraindications: (1) Hypersensitivity to penici (2) Infections by penicillinase-producing staphyloc or other penicillinase-producing organisms.

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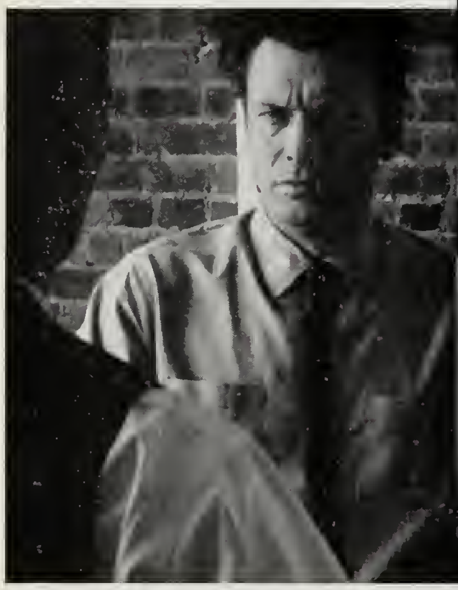

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Indications: Valium (diazepam) is of use in dealing with anxiety reactions stemming from stressful circumstances or whenever somatic complaints are concomitants of emotional factors. It is useful in psychoneurotic states manifested by anxiety, tension, fear and fatigue.

Valium (diazepam) may also be useful in acute agitation due to alcohol withdrawal.

Valium (diazepam) may be of use to alleviate muscle spasm associated with cerebral palsy and athetosis.

Dosage and administration	*Usual daily dose*
Mild to moderate psychoneurotic reactions: Manifested by anxiety-tension alone or with depressive symptomatology, agitation, restlessness, psychophysiological disturbances	2 mg to 5 mg, 2 or 3 times daily
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Alcoholism: As an aid in symptomatic relief of acute agitation, tremor, impending or acute delirium tremens and hallucinosis	10 mg, 3 or 4 times during the first 24 hours; reducing to 5 mg, 3 or 4 times daily as needed
Muscle spasm associated with cerebral palsy or athetosis	2 mg to 10 mg, 3 or 4 times daily

Contraindications: Valium (diazepam) is contraindicated in infants, patients with a history of convulsive disorders or patients with a history of glaucoma.

Warning: Valium (diazepam) is not of value in the treatment of psychotic patients, and for this reason should not be employed in lieu of appropriate treatment.

Precautions: In elderly or debilitated patients, it is important to limit the dosage to the smallest effective amount to preclude the development of ataxia or oversedation (not more than 1 mg, 1 or 2 times daily initially, to be increased gradually as needed and tolerated). As is true of all CNS-acting drugs, until the correct maintenance dosage is established, patients receiving Valium (diazepam) should be advised against possibly hazardous procedures requiring complete mental alertness or physical coordination. Driving an automobile during the period of Valium (diazepam) therapy is not recommended. In general, the concurrent administration of Valium (diazepam) and other psychotropic agents is not recommended. If such combination therapy is used, careful consideration should be given to the pharmacology of the agents to be employed with Valium (diazepam)—particularly with known compounds which may potentiate the action of Valium (diazepam), such as phenothiazines, barbiturates, MAO inhibitors and other antidepressants.

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Side effects: In clinical use, fatigue, drowsiness and ataxia have been reported; in most instances these are dose-related and may be avoided by proper dosage adjustment. Mild nausea and dizziness may occur on occasion. As with any new agent, when it is administered for protracted periods of time, periodic blood counts and liver function tests are advisable. Abrupt cessation after prolonged overdosage may, in some patients produce withdrawal symptoms (*e.g.*, convulsions, tremor, abdomina and muscle cramps, vomiting, sweating) similar to those seen with barbiturates, meprobamate and Librium® (chlordiazepoxide HCl). Changes in EEG patterns have been observed in patients during and after Valium (diazepam) treatment.

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March, 1965

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*Lennox, W. G.: Epilepsy and Related Disorders, Boston, Little, Brown and Company, 1960, vol. 2, p. 865. 43264

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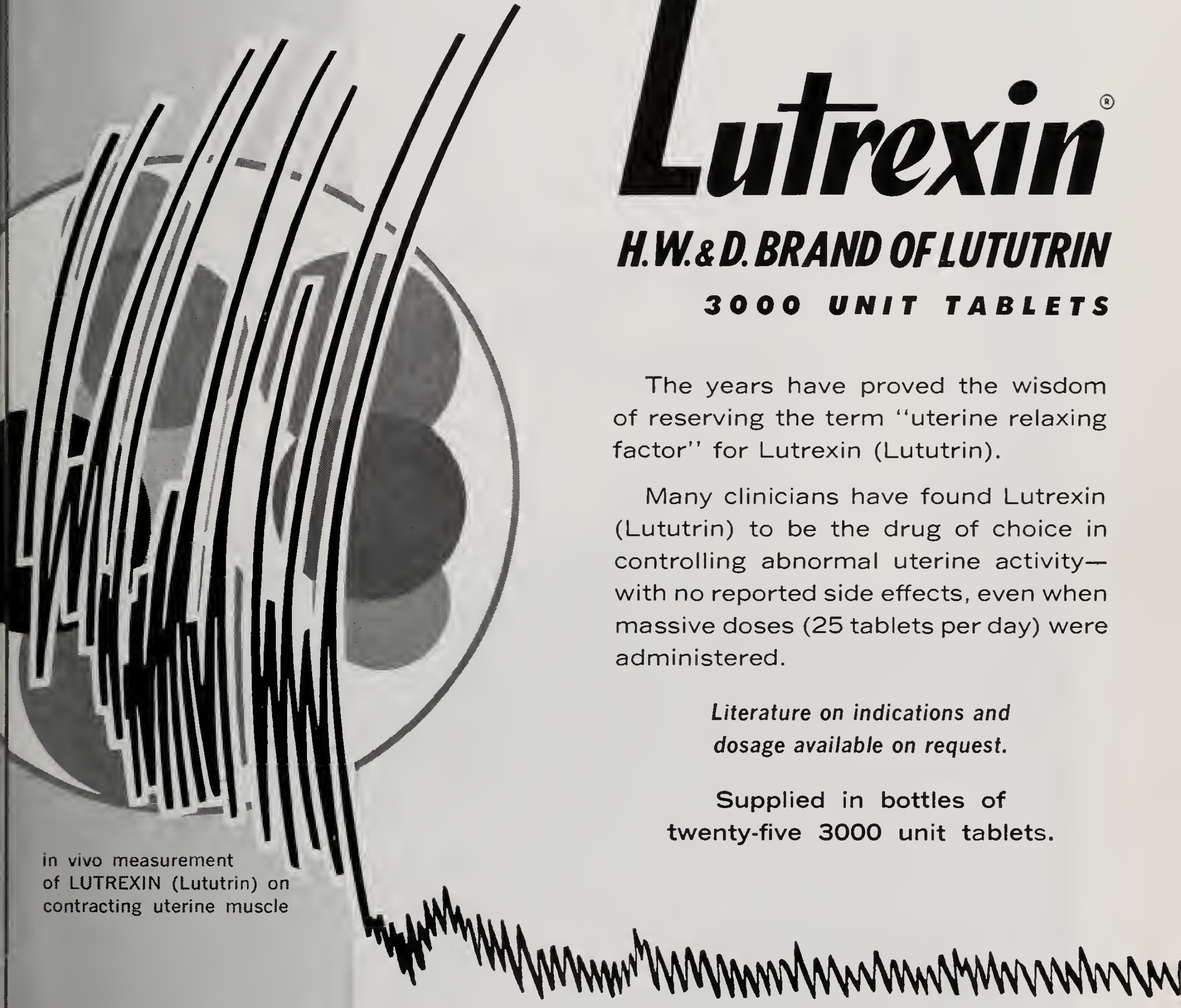

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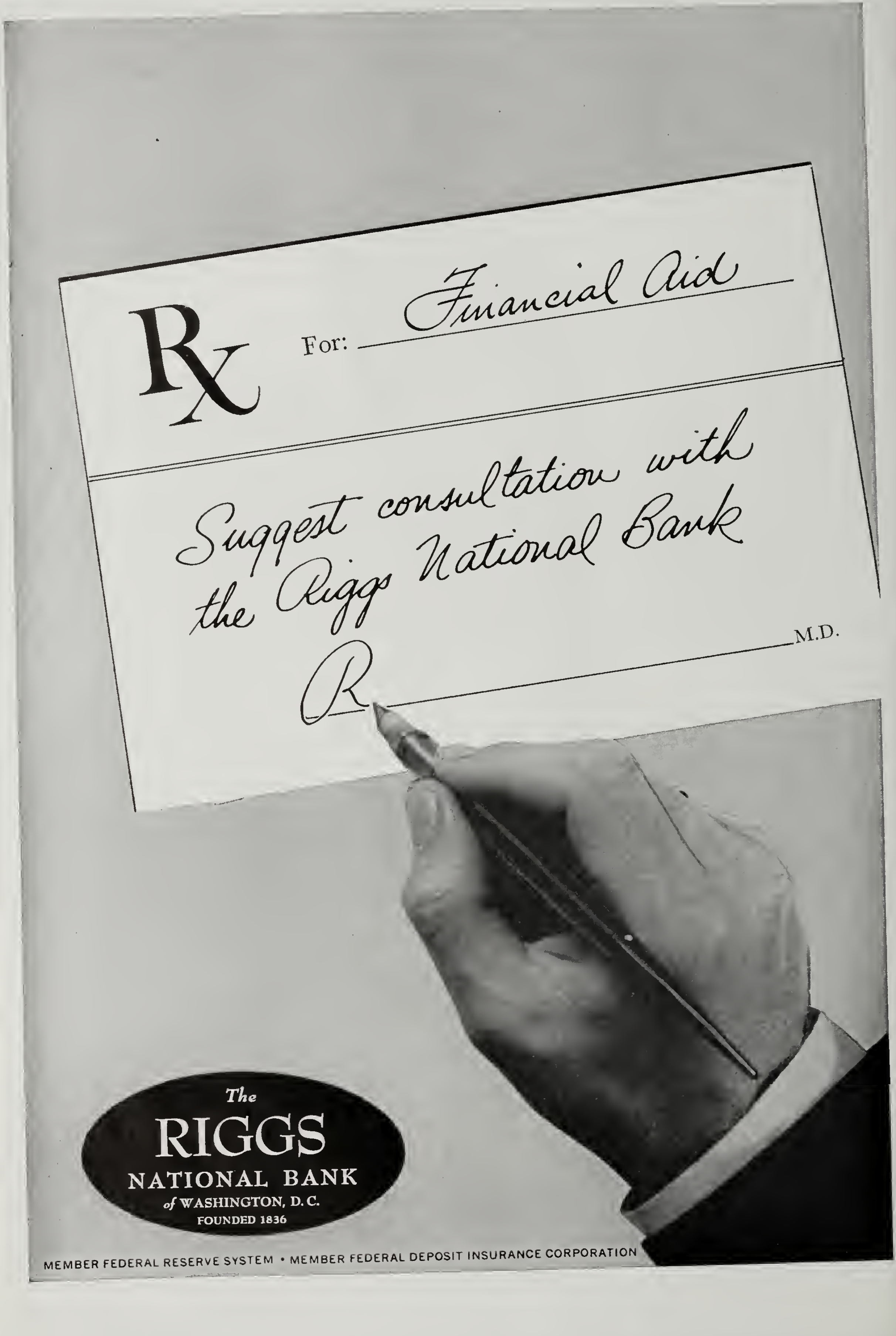
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Yearly Subscription, $4.50
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Second-class postage paid at Baltimore, Md.
Published monthly at
Mount Royal and Guilford Avenues,
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March 28–April 1: International Anesthesia Research Society. Mayflower Hotel, Washington, D.C. Address: Dr. A. William Friend, Executive Secretary, 227 Wade Park Manor, Cleveland 6, Ohio

March 29–April 1: Southeastern Surgical Congress. Statler Hilton Hotel, Washington, D. C. Address: Dr. A. H. Letton, Secretary-Director, 340 Boulevard N. E., Atlanta, Ga.

April 5–8: 38th Annual Spring Congress in Ophthalmology. Gill Memorial Eye, Ear and Throat Hospital, Roanoke, Va. Address: Superintendent, Box 1789, Roanoke, Va.

April 5–8: Industrial Medical Association. Americana Hotel, Bal Harbour, Fla. Address: Mr. Clark D. Bridges, *Managing Director*, 55 East Washington Street, Chicago 2, Ill.

April 5–9: American College of Physicians: Postgraduate Course No. 12. Hurd Hall, The Johns Hopkins Hospital, Baltimore. Address: Dr. Edward C. Rosenow, Jr., *Executive Director*, 4200 Pine Street, Philadelphia, Pa., 19104

April 12–16: American Academy of General Practice. Civic Auditorium, San Francisco. Address: Mr. Mac F. Cahal, *Executive Director*, Volker Boulevard at Brookside, Kansas City 12, Mo.

April 26–29: Aerospace Medical Association. New York Hilton Hotel, New York. Address: Dr. William J. Kennard, *Executive Vice President*, Washington National Airport, Washington, D. C. 20001

April 26–29: American Academy of Pediatrics. Americana Hotel, Bal Harbour, Fla. Address: Dr. E. H. Christopherson, *Executive Director*, 1801 Hinman Avenue, Evanston, Ill. 60204

April 26–May 1: American Academy of Neurology. Sheraton Cleveland Hotel, Cleveland. Address: Mr. Thomas D. Swedien, *Executive Secretary*, 7100 France Avenue South, Minneapolis, Minn.

April 29–May 1: American Association for History of Medicine. Philadelphia. Address: John B. Blake, Ph.D., *Secretary-Treasurer*, c/o National Library of Medicine, 9600 Wisconsin Avenue, Bethesda, Md.

April 29–May 2: Pan American Medical Association (40th Anniversary Congress). Fontainebleau Hotel, Miami Beach, Fla. Address: Dr. Joseph J. Eller, *Director General*, 745 Fifth Avenue, New York 22, N. Y.

June 17–21: American College of Chest Physicians. Waldorf-Astoria Hotel, New York. Address: Mr. Murray Kornfeld, *Executive Director*, 112 East Chestnut Street, Chicago, Ill. 60611

June 19: American Association for the Study of Headache. New York Hilton Hotel, New York. Address: Dr. Lester S. Blumenthal, *Chairman*, 5315 Connecticut Avenue, N. W., Washington, D. C. 20015

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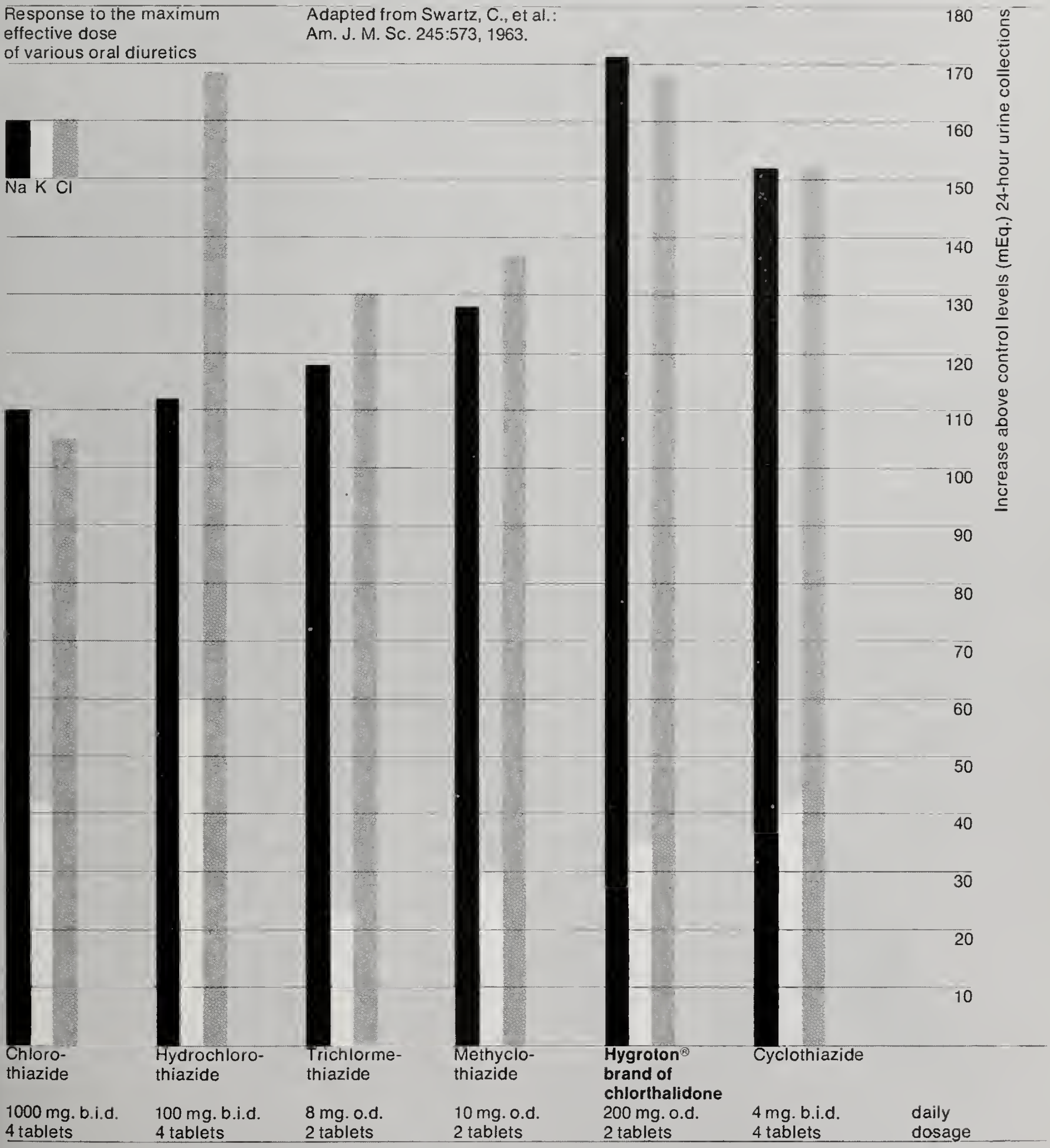

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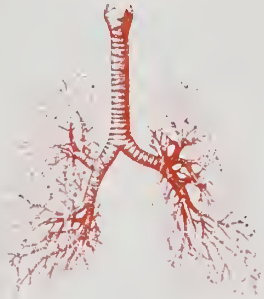

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*A.M.A. Council on Drugs: J.A.M.A. 183:469 (Feb. 9) 1963.

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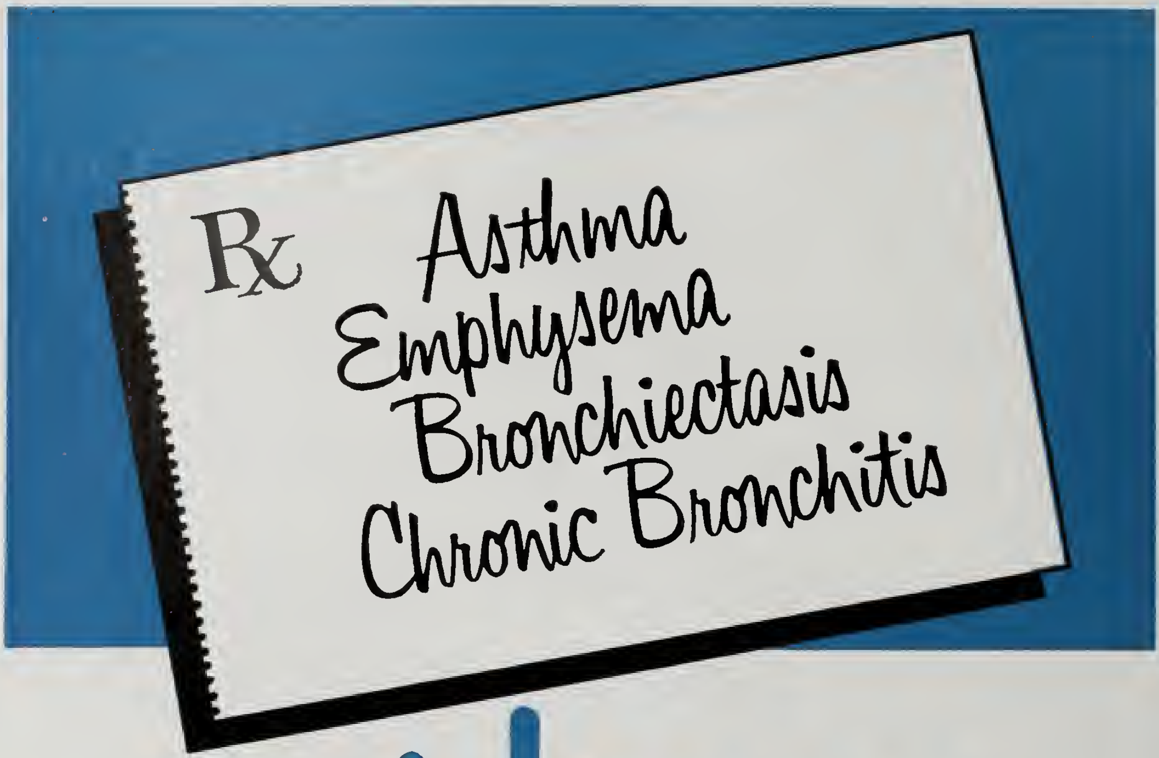

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* AMA Council on Foods and Nutrition: The Regulation of Dietary Fat, *JAMA* 181:411-423 (August 4, 1962).
AMA Council on Foods and Nutrition: Composition of Certain Margarines, *JAMA* 179:719 (March 3, 1962).

BOOK REVIEWS

Synopsis of Pathology, 6th ed. W. A. D. Anderson, M.A., M.D., F.A.C.P., F.C.A.P. Price, $9.75. Pp. 883, with 406 text illustrations and 4 color plates. St. Louis: Mosby, 1964.

It is generally acknowledged in the medical field that in addition to the conventional single author textbooks 2 other types have appeared in recent years in increasing numbers. One of these is the multiple author book with numerous contributors, each with his own style of writing and some duplication of information, and the other the abbreviated book that is all too frequently too limited in scope.

Of the latter group in the specialty of pathology is Dr. Anderson's "Synopsis," which does a remarkable job of avoiding the pitfalls of this type of book. It is at present one of the oldest in this field, having been first copyrighted in 1942. The first edition had a total of 659 pages and bore the notation that it was "produced in full compliance with the Government's regulations for conserving paper and other essential materials." In spite of this the first edition included 294 text illustrations and 17 color plates. The sixth edition, 22 years later, contains 883 pages, 406 illustrations including diagrams, and only 4 color plates. All medical book publishers are extremely resistant to the inclusion of color plates because of the expense. This is unfortunate, for at present the quality of color reproductions has been greatly improved. Many of the photographs of gross pathology originally taken from the collection of Dr. H. C. Schmeisser at the University of Tennessee have been retained, as have 2 microphotographs by Dr. Henry Pinkerton of St. Louis University. Prior to the appearance of the first edition Dr. Anderson had served on the staff of each of these department chairmen.

The value and acceptance of the book is attested to by the very fact it is now in its sixth edition. The current revision includes 26 tables in contrast to the 17 of the first edition. This has enabled the author to be more comprehensive and yet not verbose. Without any disrespect to Dr. Anderson being intended, many users of his book have referred to it as "Little WAD." While this naturally follows because of his initials, it has nevertheless had a special connotation for being a potent little package, especially among those familiar with tobacco chewing. The book is heartily recommended to all in the practice of medicine who need a concise pathology reference, and to all medical students who may consider pathology too complex and find themselves becoming lost in details.

George P. Blundell, M.D.

Handbook of Obstetrics and Gynecology. Ralph C. Benson, M.D. Price (paper), $5.00. Pp. 656. Los Altos, Calif.: Lange, 1964.

A "Handbook of Obstetrics and Gynecology" by Dr. Ralph C. Benson, who is Professor of Obstetrics and Gynecology at the University of Oregon in Portland, is an excellent book of the category which the title makes self-explanatory. This small compendium is precisely what the title states, namely, a complete but concise review of obstetrics and gynecology. Its greatest value undoubtedly will be for medical students, house officers, or busy general practitioners, any of whom might find it difficult to review the more established textbooks.

With few exceptions as to the subject matter, the reviewer is in agreement with the author. It is difficult to believe that there is an easier way to pack the uterus, for example, than with a Holmes packer, and fetal electrocardiography might have been mentioned in the diagnosis of multiple pregnancy. The reviewer would also disagree with an increased use of cesarean hysterectomy for sterilization purposes. That would seem to be fairly radical therapy to advocate in a book designed for the nonspecialist. Although the reviewer does not believe that medial lateral episiotomy should have any advocates, he would concede its mention in the text being reviewed on the basis that it is not designed primarily for specialists.

From a gynecologic standpoint, there could be little disagreement except for the statement that "hysterosalpingography is helpful in the diagnosis of cancer of the endometrium." That came as somewhat of a surprise because the use of that diagnostic medium has not been employed in this area for that diagnosis.

The book is well written, well illustrated and concise. It can be recommended to anyone who has need of a "handbook" for a quick review of the subject of obstetrics and gynecology.

Robert H. Barter, M.D.

Give and Take: The Development of Tissue Transplantation. Francis D. Moore, M.D. Price, $5.50. Pp. 182, with 19 illustrations. Philadelphia: Saunders, 1964.

This short treatise is a current history of the fascinating subject of tissue transplantation. It is also published in a trade edition for the public.

The discussion of immunity and rejection is a fine summary of the work done in this field and is most lucid.

The kidney produced much information that we have today on all aspects of organ transplant. Numerous research men and clinical physicians are named and credited for their work, beginning with Alexis Carrel. This phase of medical intelligence further reinforces the absolute necessity of legitimate animal experimentation. The courage of the daring physicians and surgeons and ultimately the courage of human donors and recipients will form the "stranger than fiction" subject matter for future books of this nature.

Dr. Moore has rendered a superb narrative. His last chapter deals with the ethics of tissue transplantation and is titled "The Doctor's Dilemmas."

I recommend this book for medical people and laity alike.

Bernard F. Peacock, M.D.

(Continued on page 22)

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Nasal congestion? Dimetapp lets your stuffed-up patients breathe easy again. Each Dimetapp Extentab works hard for up to 10-12 hours to open up congestion. And, with little likelihood of adverse reactions. Indeed, side effects with the antihistamine in Dimetapp-Dimetane® (brompheniramine maleate) were found in one investigation to be as few as with placebo.[2]

1. Clinical report on file, Medical Department, A. H. Robins Co., Inc.
2. Schiller, I. W. and Lowell, F. C.: New England J. Med. 261:478, 1959.

BRIEF SUMMARY: Indications: Dimetapp reduces nasal secretions, congestion, and postnasal drip for symptomatic relief of colds, U.R.I., sinusitis, and rhinitis. **Contraindications:** Antihistamine sensitivity. Not recommended for use during pregnancy. **Precautions:** Administer with caution in the presence of cardiac or peripheral vascular diseases and hypertension. Until the patient's response has been determined, he should be cautioned against engaging in operations requiring alertness. **Side Effects:** Hypersensitivity reactions including skin rashes, urticaria, hypotension and thrombocytopenia have been reported on rare occasions. Drowsiness, lassitude, nausea, giddiness, dryness of the mouth, mydriasis, increased irritability or excitement may be encountered.

See product literature for complete prescribing information.

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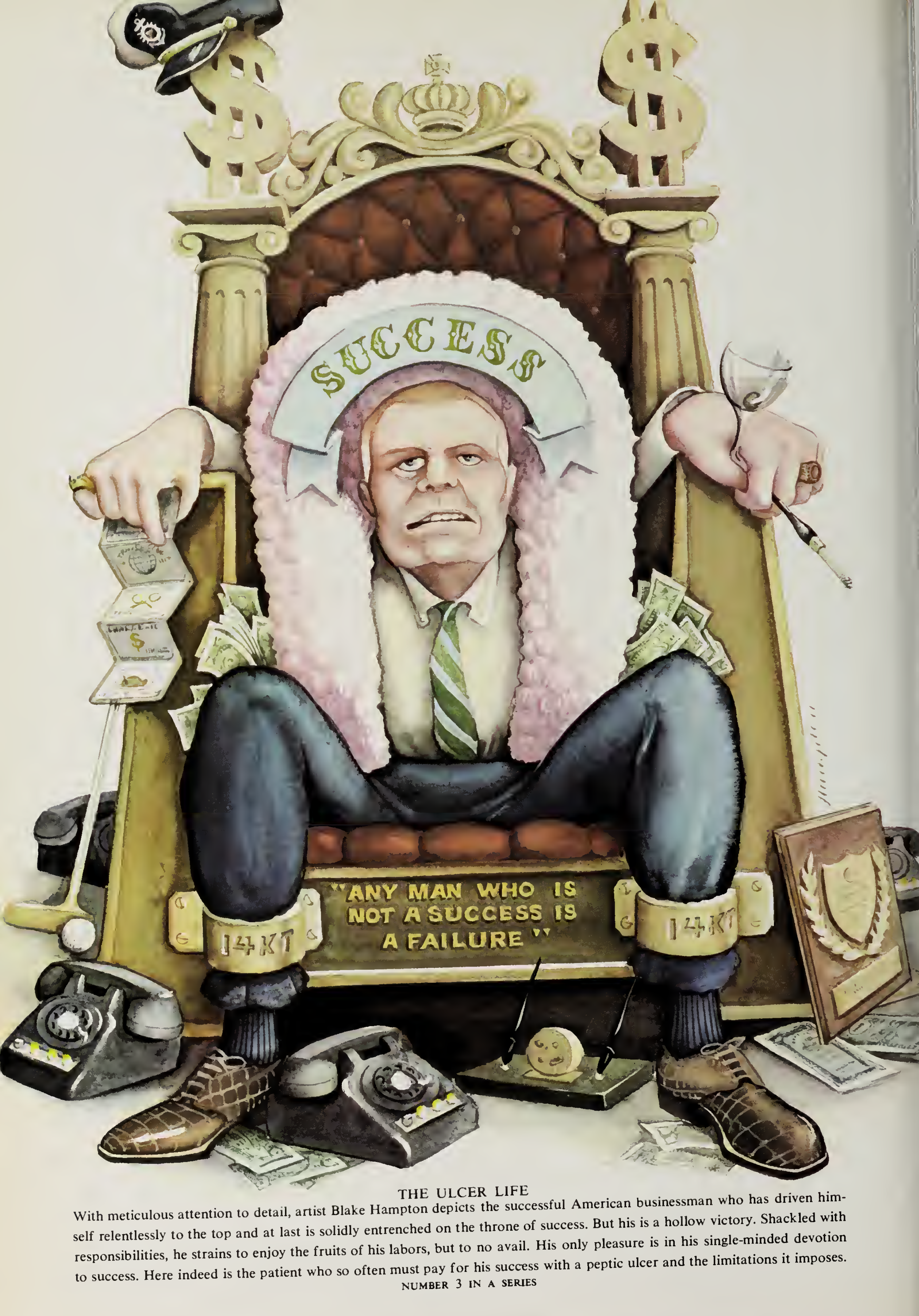
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NUMBER 3 IN A SERIES

in peptic ulcer therapy—"little things mean a lot"

it's the sum total of many subtle advantages that makes glycopyrrolate a superior anticholinergic

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glycopyrrolate 2 mg. / phenobarbital 16.2 mg. / (warning: may be habit forming)

The remarkable efficacy of Robinul (glycopyrrolate) in the treatment of peptic ulcer cannot be attributed to any single characteristic of the drug. Rather it is the sum total of several subtle pharmacologic advantages that enables this anticholinergic to make such a significant contribution to the total ulcer regimen.

Epstein[1] found glycopyrrolate's intensive antisecretory action to be exemplary. Breidenbach[2] was impressed by its pronounced antispasmodic effects. And Young and Sun[3] reported that a 2 mg. oral dose "did not affect gastric emptying or intestinal transit time. . . ." According to Slanger[4], the absence of annoying side effects is an important plus factor ". . . for it permits ready individualization of dosage for control of mild to severe symptoms." Posey[5] sums it up when he says, "In effect, with glycopyrrolate, one approaches an ideal agent for the management of peptic ulcer. With it a vagolytic effect may be obtained without interfering with gastric emptying—the medical equivalent to vagectomy plus an adequate drainage procedure."

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BRIEF SUMMARY

INDICATIONS: In addition to its primary indications for duodenal and gastric ulcer, glycopyrrolate is indicated for other G-I conditions which may benefit from anticholinergic therapy. Robinul-PH Forte (glycopyrrolate 2 mg. with phenobarbital) is indicated when these situations are complicated by mild anxiety and tension.

CONTRAINDICATIONS: Glaucoma, urinary bladder neck obstruction, pyloric obstruction, stenosis with significant gastric retention, prostatic hypertrophy, duodenal obstruction, cardiospasm (megaesophagus), and achalasia of the esophagus, and in the case of Robinul-PH Forte, sensitivity to phenobarbital.

PRECAUTIONS: Administer with caution in the presence of incipient glaucoma.

SIDE EFFECTS: Dryness of the mouth, blurred vision, urinary difficulties, and constipation are rarely troublesome and may generally be controlled by reduction of dosage. Other side effects associated with the use of anticholinergic drugs include tachycardia, palpitation, dilatation of the pupil, increased ocular tension, weakness, nausea, vomiting, headache, dizziness, drowsiness, and rash.

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REFERENCES: 1. Epstein, J. H.: Am. J. of Gastroent., 37:295, March, 1962. 2. Breidenbach, W. C.: Investigative Clinical Report, March, 1961. 3. Young, R., and Sun, D. C. H.: Ann. N. Y. Acad. Sc., 99:174, Feb., 1962. 4 Slanger, A.: Journal of New Drugs, 2:215, July-Aug., 1962. 5. Posey, E. L., Jr.: Am. J. Dig. Dis., 7:863, Oct., 1962.

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Book Reviews

(*Continued from page 18*)

A Marriage Manual for Catholics. William A. Lynch, M.D. With a Foreword by His Eminence, Richard Cardinal Cushing. Price, $4.95. Pp. 359. New York: Trident Press, 1964.

Dr. Lynch's "A Marriage Manual for Catholics" is a comprehensive book which covers subjects ranging from dating and the meaning of marriage through to the menopause. In the foreword the volume is well described by Richard Cardinal Cushing, Archbishop of Boston, who states: "It presents a reverent, practical, and realistic source of information about the physical, emotional, and esthetic aspects of marriage."

Stanley A. Forster, M.D.

Cardiac Arrest and Resuscitation, 2nd ed. Hugh E. Stephenson, Jr., B.S., M.D., F.A.C.S. Price, $15.00. Pp. 501, with 75 illustrations. St. Louis: Mosby, 1964.

The second edition of Dr. Stephenson's book should be an invaluable reference work for those engaged in teaching cardiac resuscitation. There is hardly any aspect of this circulatory catastrophe which is not covered. The mechanism of arrhythmias is entertained and thoroughly discussed. The diagnosis and management of cardiac arrest, the genesis of ventricular asystole and fibrillation, the pharmacology of therapeutic agents, endocardial catheter pacemaking, transistorized myocardial pacemaker implants, the use of hypothermia and of postsystolic circulatory augmentation, the phenomenon of metabolic acidosis, resuscitation of obstetric and pediatric patients, and even the medicolegal aspects of cardiac resuscitation are all expertly and exhaustively covered in this treatise.

However, as a practical guide to the management of acute cardiac arrest this book cannot be recommended. Its very magnitude precludes effectiveness in presenting the significant aspects of cardiac arrest and resuscitation to students and to practicing physicians. An inordinate emphasis has been placed on anesthetic and operative arrests, with minimal attention to postmyocardial infarction arrest. The text is often tortuous, ambiguous, and there are innumerable typographic errors which create confusion and make reading difficult.

Barton J. Gershen, M.D.

Case Studies in Obstetrics and Gynecology. F. Jackson Stoddard, M.D. Price, $8.50. Pp. 312, illustrated. Philadelphia: Saunders, 1964.

Case Studies in Obstetrics and Gynecology is a welcome addition to the armamentarium of the busy practitioners of obstetrics and gynecology as well as to the resident in training.

Sixty case studies are presented concisely and in a manner that makes for easy and interesting reading. The case histories, physical examinations, and laboratory data are well documented and followed by a discussion of the important facets of each case. A question-and-answer section also follows each case and serves to fix in the reader's mind the pertinent or salient aspects involved.

Practically all aspects of obstetrics and gynecology are covered by illustrative cases; however, the discussions of malignancy of cervix, uterus and ovary, and endocrinologic aspects of amenorrhea and emotional aspects of gynecologic complaints and those associated with childbirth bear special mention.

The case of Stage II carcinoma of the cervix and discussion clearly points out that cure rates are greatly dependent on early diagnosis. The use of the Papanicolaou smear and conization in diagnosis is emphasized. It is pointed out that 2 primary forms of treatment, irradiation and surgery, are available and the choice is dependent on the abilities of the surgeon and radiotherapist and availability of adequate facilities.

The section on amenorrhea includes entities such as gonadal dysgenesis, testicular feminization and adrenal virilism which may be rarely seen by the average practitioner or the diagnosis missed because of lack of familiarity with the clinical features.

The cases and discussions of the emotional aspects of obstetrics and gynecology serve to remind us that surgical procedures are not always the panacea for the relief of pelvic pain, that emotional illness associated with childbirth is frequent, and that early recognition of signs and symptoms and consultations with a psychiatrist are often needed.

The case history method of presentation has long been recognized as an efficacious means of medical teaching and it is through this method that we grow in stature in terms of judgment in the management of our patients.

Charles M. Cabaniss, M.D.

The First Twenty Years of The University of Texas M.D. Anderson Hospital and Tumor Institute. Price, $7.50. Pp. 564, illustrated. Houston: The University of Texas M.D. Anderson Hospital and Tumor Institute, 1964.

As the name implies, this book is a history of the Cancer Institute and Hospital in Houston, Texas. This journal has been prepared by members of the institution. It is, without doubt, an accurate description of the administrative and medical growth and development of the M.D. Anderson Hospital. The narrative is simply and accurately presented. There are a number of pictures which illustrate the text. An extensive section at the end of the book is devoted to the bibliographies of the members of the staff and also to a statistical review of all the cases treated at the Hospital.

The content of this book would interest few individuals other than those directly concerned with the M.D. Anderson Hospital or individuals concerned with administration of similar institutions. Although the work is well done, it appears intended for an extremely limited group of readers.

John F. Potter, M.D.

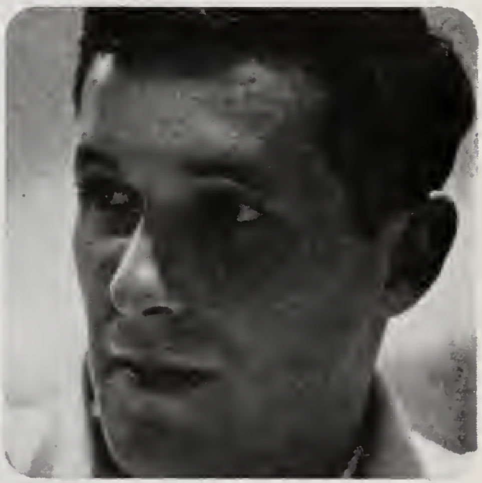
a cup of coffee?

Fine! This last patient...

Mrs. Jones?

She's down to 140/85.

Right. When we started, she was 195/120.



Is that Regroton again?

r all my hypertensives.

Does Regroton always work this well?

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scontinue 2 weeks before general
1 week before electroshock therapy,
ession or peptic ulcer occurs.
: Reduce dosage of concomitant anti-
e agents by one-half. Discontinue if
es or liver dysfunction is aggravated.
imbalance and potassium depletion
take particular care in cirrhosis or
severe ischemic heart disease, and in patients receiving corticosteroids, ACTH, or digitalis. Salt restriction is not recommended. Use with caution in patients with ulcerative colitis, gallstones, or bronchial asthma.
Side Effects: Nausea, vomiting, diarrhea, muscle cramps, headaches and dizziness. Potential side effects include angina pectoris, anxiety, depression, drowsiness, hyperglycemia, hyperuricemia, lassitude, leukopenia, nasal stuffiness, nightmare, purpura, urticaria, and weakness.
For full details, see the complete prescribing information.

Availability: Bottles of 100 and 1000 tablets.
Average Dosage: One tablet daily with breakfast.

*Chupkovich, V.; Finnerty, F. A., Jr., and Kakaviatos, N.: The value of chlorthalidone plus reserpine in moderately severe and severe hypertension: A two year study. Presented at the 7th Inter-American Congress of Cardiology, Montreal, June 14–19, 1964.

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...but if your patient can't get away, relieve sneezing, running nose, and congestion of colds and sinusitis all day or all night with one

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Each capsule contains 8 mg. of Teldrin® (brand of chlorpheniramine maleate), 50 mg. of phenylpropanolamine hydrochloride, and 2.5 mg. of isopropamide, as the iodide.

Summary of contraindications, cautions and side effects: Do not use in patients with glaucoma, prostatic hypertrophy, stenosing peptic ulcer, pyloric duodenal obstruction, or bladder neck obstruction. Use with caution in the presence of hypertension, hyperthyroidism, or coronary artery-disease. Drowsiness; excessive dryness of nose, throat or mouth; nervousness or insomnia may occur on rare occasions but are usually mild and transitory.

Before prescribing, see SK&F Product Prescribing Information.

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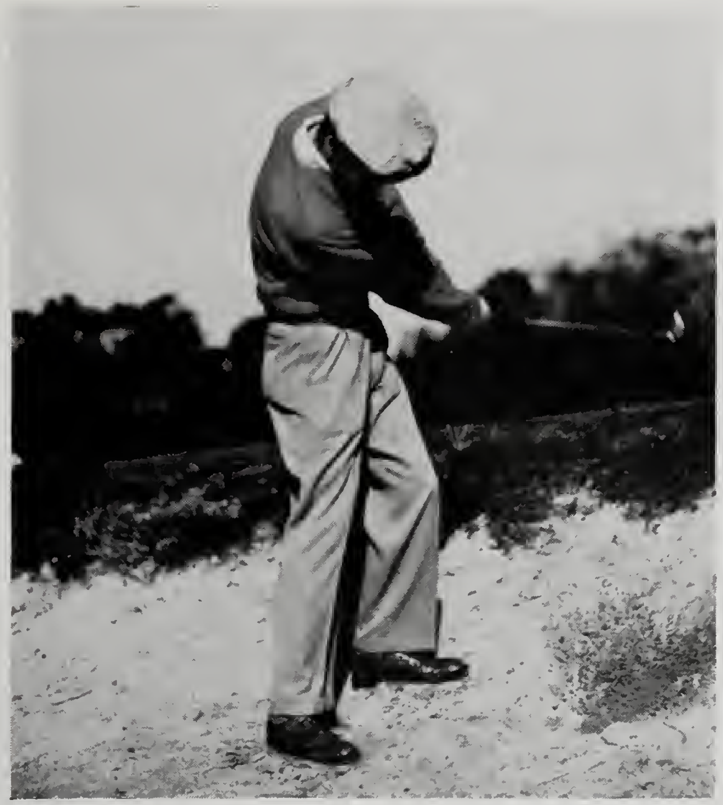

Your patient doesn't have to be in the Masters to get sprains and strains

'Soma' Compound helps relieve pain and relax muscle in many musculoskeletal disorders. Patient comfort can be increased and recovery time shortened.

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carisoprodol 200 mg., phenacetin 160 mg., caffeine 32 mg.

rational combination therapy for most patients with strains and sprains: relaxes muscle, relieves pain

Also available as 'Soma' Compound with Codeine: carisoprodol 200 mg., phenacetin 160 mg., caffeine 32 mg., codeine phosphate 16 mg. (Warning: may be habit-forming.)

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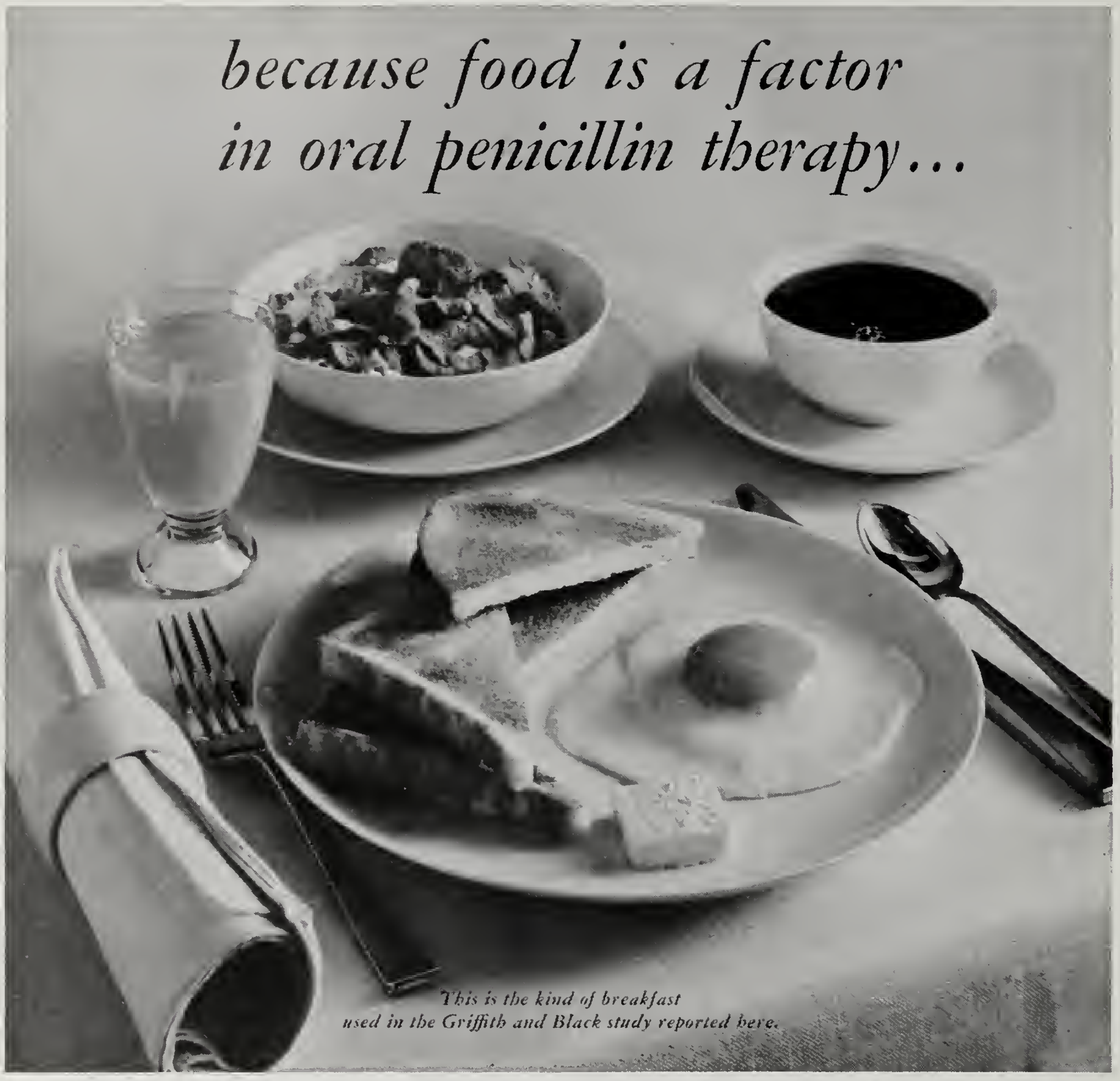

This is the kind of breakfast used in the Griffith and Black study reported here.

Consider V-Cillin K, the acid-stable penicillin that is less affected by gastric acids than is oral penicillin G. In fact, comparative data show that V-Cillin K given with meals produces blood levels *twice* as high with just *half* the dose. Such pharmacologic characteristics provide your patients consistently dependable therapy. In addition, significant economy is achieved, since three to four times as much oral penicillin G is required to assure equivalent antibacterial activity.[1]

Indications: V-Cillin K is an antibiotic useful in the treatment of streptococcus, pneumococcus, and gonococcus infections and infections caused by sensitive strains of staphylococci. ***Contraindications and Precautions:*** Although sensitivity reactions are much less common after oral than after parenteral administration, V-Cillin K should not be administered to patients with a history of allergy to penicillin. As with any antibiotic, observation for overgrowth of nonsusceptible organisms during treatment is important. *Usual Dosage Range:* 125 mg. (200,000 units) three times a day to 250 mg. every four hours. ***Supplied:*** Tablets V-Cillin K, 125 or 250 mg., and V-Cillin K, Pediatric, 125 mg. per 5-cc. teaspoonful, in 40, 80, and 150-cc.-size packages.

1. Griffith, R.S., and Black, H.R.: Current Ther. Res., *6:* 253, 1964.

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MEDICAL ANNALS
of the District of Columbia

March 1965 VOLUME XXXIV • NUMBER 3

Doctors Hospital Number

THIS ISSUE of the MEDICAL ANNALS is dedicated to **Dr. Charles Stanley White,** Professor Emeritus of Surgery, George Washington University School of Medicine, and Chief of Surgery Emeritus, Doctors Hospital. The scientific papers are supplied by members of the staff of Doctors Hospital.

Use of Walking Venous Pressure Studies and Phlebography in Evaluation of Chronic Venous Insufficiency

HENRY H. BALCH, M.D., F.A.C.S.
Associate Attending Surgeon in General Surgery, Doctors Hospital, Washington

LINTON[1] has estimated that 300,000 to 400,000 people in the U.S.A. suffer from chronic ulceration of the lower extremity secondary to deep venous thrombosis. Others suffer varying degrees of incapacity from edema, pain, stasis dermatitis and stasis cellulitis, which are characteristic features of chronic venous insufficiency and precursors of actual ulceration. Although the pathologic physiology of venous insufficiency is reasonably well understood, satisfactory therapy for advanced stages of this disease is sometimes elusive.

In the normal lower extremity blood is returned to the heart via superficial, communicating and deep veins, all of which have bicuspid valves which promote centripetal blood flow. Leg motion provides a muscular pump which compresses veins expressing blood toward the heart so long as the valves are competent; this pump mechanism must work efficiently for optimal venous return in the erect position.

Thrombosed deep veins sometimes recanalize. If this occurs a conduit for blood is provided but valves in the segment are destroyed. The resultant increased flow of blood in superficial or secondary venous channels leads in time to dilatation of those veins and to valve failure. Superficial veins become "varicose," but communicating veins are also incompetent. In such circumstances venous return from the leg is greatly impaired and the muscular venous pump inefficient. There is sustained maximal venous tension in the leg veins throughout any period of standing, and this results in edema, fibrosis, skin changes, and ulceration.

Primary varicose veins involve only the superficial system (internal and/or external saphenous) of veins and are relatively easy to evaluate and treat. The demonstration of retrograde filling of the emptied veins after assumption of the standing position (Trendelenburg test) proves that valves are incompetent and that return flow of blood by the superficial route is impaired in the ambulatory patient. If these veins do not empty readily on walking after application of a proximal tourniquet (Perthes' test), incompetent communicating veins are probably also present.

The functional evaluation of the venous system when the deep system is also involved is more difficult, and the same may be true in patients with varicose veins recurrent after high ligation and distal vein surgery or injection therapy. The measurement of ambulatory venous pressures and X-ray visualization of the deep venous system are often helpful in such cases.

Ambulatory venous pressures measure the capacity of the muscular pump to push venous blood toward the heart before and after obliteration of the superficial veins by tourniquets applied to the leg successively from thigh to calf. If obliteration of the superficial veins restores this capacity to normal or improves it, surgical obliteration of those veins may be helpful.

The normal standing venous pressure at the ankle is about 110 to 130 cm. of water. On rapid walking this drops 50 to 60 per cent with return to the standing level when walking stops. With an inefficient muscular pump the pressure may drop less than normal or not at all. In such circumstances, if after obliteration of superficial veins a normal drop in ambulatory pressure occurs there is a competent deep circulation but incompetent superficial centripetal blood flow. A smaller drop in pressure gives some indication of what surgical obliteration of superficial veins would accomplish in the presence of some deep-vein incompetence. No change or an increase in walking pressure after tourniquet application strongly contraindicates surgery to superficial veins which are probably contributing importantly to return flow of blood.

Venograms are helpful by outlining the major deep channels and, depending on the technique used, may demonstrate incompetent valves in the deep and communicating systems of veins. Contrast medium is injected into a superficial vein about the ankle and directed to the deep veins by a tourniquet which obliterates all superficial veins at a circumferential point immediately above the site of injection. Thrombosed major veins do not visualize, and dye passes to superficial veins via incompetent perforating veins. Retrograde injection of contrast material in the common femoral vein with the patient semi-erect demonstrates the efficacy of valves in the proximal saphenous and femoral veins. Where valves are incompetent major veins are outlined throughout the leg. The following examples demonstrate the foregoing principles.

Illustrative Cases

Case 1. A 42-year-old woman complained of swelling and pain in the legs and feet, worse in the evenings. Nine years previously she had undergone bilateral high ligation of internal saphenous veins followed by injection of sclerosing solution into distal varices. Four years previously there had been an episode of questionable phlebitis of the right leg. Examination revealed bilateral varicose internal saphenous veins and additional varicosities. There were no skin changes. The Trendelenburg test was positive, and Perthes' test was negative. The clinical impression was recurrent varicose veins of the superficial system with a competent deep system. Ambulatory venous pressures confirmed this, and venograms demonstrated patent deep veins with competent valves (figure 1).

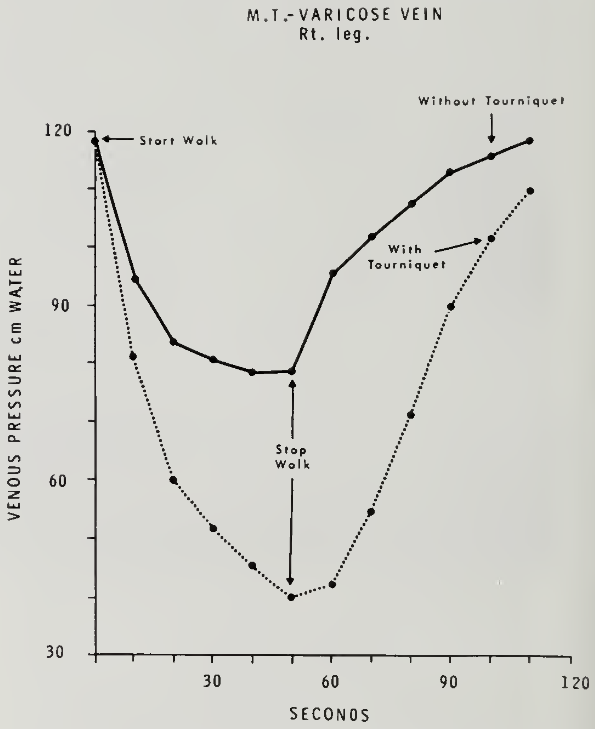

FIG. 1. Ambulatory venous pressure falls to normal level after application of tourniquet occluding internal saphenous vein.

The patient underwent bilateral stripping of internal saphenous veins and spot interruption of varices with an excellent result.

Case 2. A 54-year-old woman complained of swelling of the legs and pain about the ankles. She had undergone bilateral high saphenous ligation 15 years earlier and had been given multiple spot injections of sclerosing solutions since that time. Examination revealed moderately swollen legs with numerous small varices below the knees. There was a red indurated area above the left medial malleolus. The Trendelenburg test was inconclusive. Perthes' test showed some emptying of varices on the left but not on the right leg. Venograms demonstrated patent deep veins throughout with incompetent perforators bilaterally. Valves in the femoral system were not completely competent on the right side but satisfactory on the left side.

Ambulatory venous pressures are recorded in figures 2 and 3. A satisfactory drop in pressure was obtained on the left side which was not improved by tourniquet application above or below the knee. A 30 per cent drop in pressure resulted on the right side after walking, and this was not improved by tourniquets placed above or below the knee and was made worse by obliterating all superficial veins with an Ace bandage. Surgical removal of residual left internal and left external saphenous veins and individual varices was performed but without significant improvement to the patient. Surgery was thought to be contraindicated on the right side and was not advised.

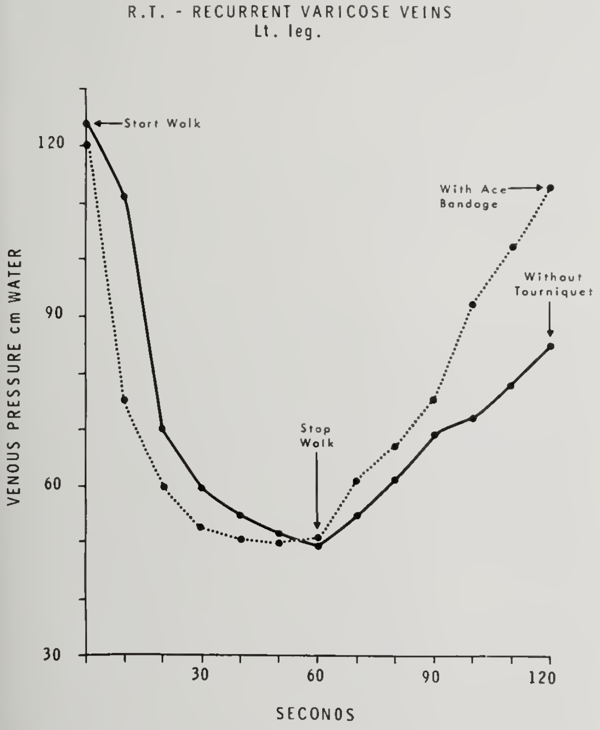

FIG. 2. Satisfactory drop in ambulatory venous pressure, not improved by application of elastic compression to superficial veins.

Case 3. A 34-year-old woman complained of swelling and "bursting" pain in the left leg and foot. This had followed childbirth 3 years earlier. Examination revealed a moderately swollen left leg and foot with 1+ pitting edema. There were numerous varicosities, and the Trendelenburg test was positive. Perthes' test was questionably positive. Ambulatory venous pressures (figure 4) showed venous hypertension with further increase in pressure on walking. Some re-

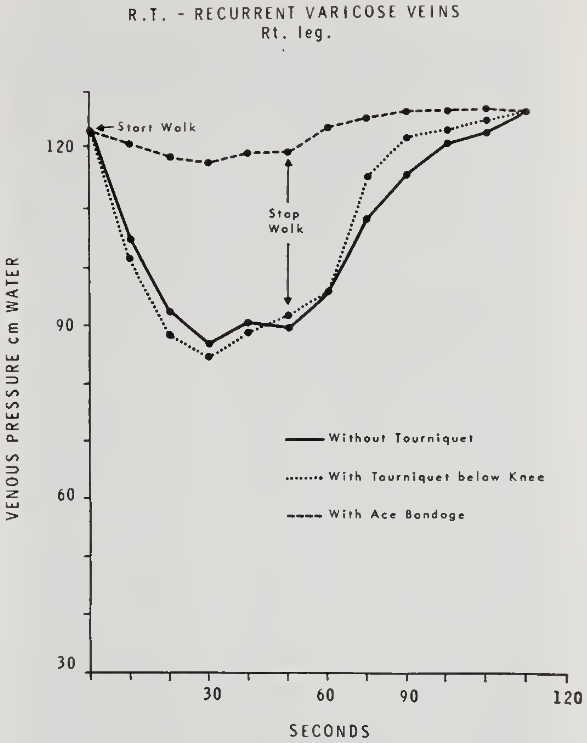

FIG. 3. Inadequate drop in ambulatory pressure, not improved by tourniquet and made worse when all superficial veins were obliterated by elastic compression bandage.

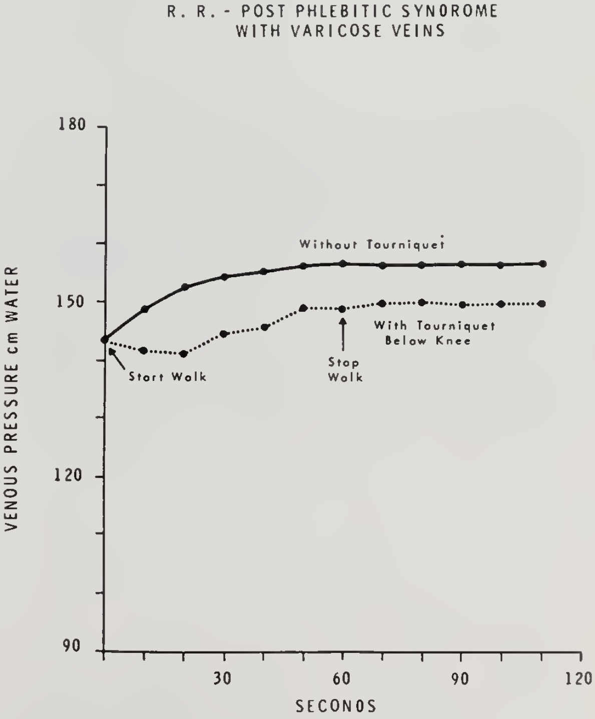

FIG. 4. High initial venous pressure which increased on walking. Tourniquet application did not drop ambulatory pressures below resting pressure.

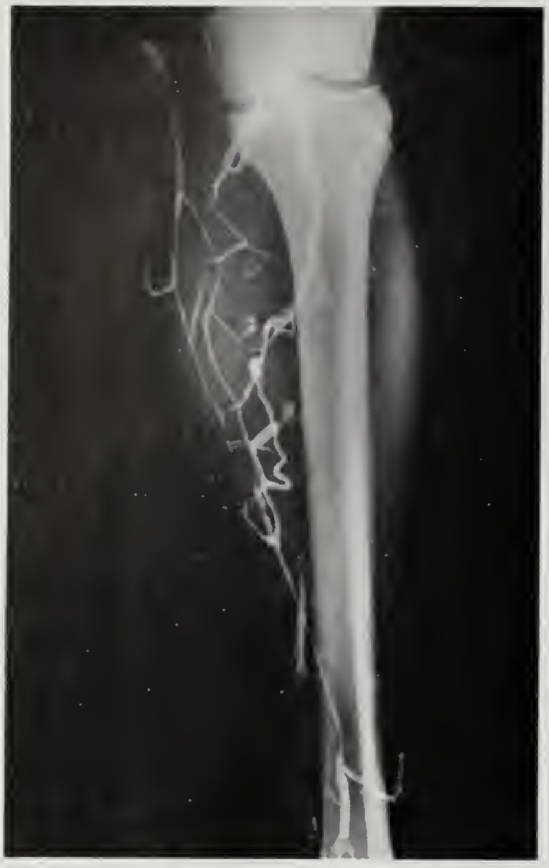

FIG. 5. Note absence of tibial and peroneal veins (deep system). Superficial veins fill from deep system.

duction in venous hypertension occurred after application of a tourniquet, but no significant drop resulted. This indicated that preservation of the superficial varicose veins was probably important for venous return, and this was confirmed by venography, which showed an absence of the main deep veins of the leg (posterior and anterior tibial and peroneal) (figure 5). Blood from the lower leg and foot was returned in part via the superficial system of veins which obviously should not be destroyed surgically. Conservative therapy was recommended.

Discussion

Examples have been presented to indicate the usefulness of venous pressure studies and X-ray visualization of deep veins in problems of venous insufficiency. Primary varicose veins usually can be properly assessed by conventional clinical tests and do not require additional studies as outlined in this paper. Ambulatory venous pressures and venograms are most useful in evaluation of problem cases, especially when there is doubt as to the presence of patent functioning deep veins. Varicosities in superficial veins appearing secondary to the onset of deep venous insufficiency may contribute to disability if there is associated valvular incompetence. Here it may be wise to advise surgical removal of superficial varicose veins. Such a decision is more easily made if ambulatory venous pressures show improvement toward normal after obliteration of the varicose veins by wrapping the leg with an Ace bandage. Venograms showing patent deep veins in the leg support the decision for surgery. On the other hand, a rise in ambulatory venous pressure after application of the Ace bandage and the absence of all or even segments of deep veins when the leg is examined by phlebography make a surgical approach unwise. Sometimes the results obtained from these studies do not permit a clear-cut evaluation as to the probable value of surgery. A final decision, as always, must be made on clinical grounds, tending to be very conservative with respect to the interruption of venous channels, superficial or deep.

1150 Connecticut Avenue, N.W.
Washington, D.C. 20036

Reference

1. Linton, R. R.: The post-thrombotic ulceration of lower extremity: its etiology and surgical treatment. Ann. Surg., 1953, **138,** 415.

The Potential Cerebral and Cardiovascular Dangers of Nitroglycerin*

DONALD W. DATLOW, M.D.

Staff Physician, Department of Medicine, Doctors Hospital, Washington; Clinical Instructor in Medicine, George Washington University School of Medicine

RASHID A. MASSUMI, M.D.

Associate Professor of Medicine, George Washington University School of Medicine; Chief, Cardiopulmonary Laboratory, District of Columbia General Hospital

NITROGLYCERIN is used universally for relief of angina pectoris. Our recent observations of precipitous hypotension and symptoms of cerebral ischemia following use of nitroglycerin in some patients occasioned the following study in order to investigate the incidence and magnitude of untoward cerebral and cardiovascular phenomena.

Methods and Materials

A group of 12 patients (7 men and 5 women) ranging in age from 37 to 74 years, with a mean age of 57 years, having various cardiovascular disturbances constitute the subjects of this study. They consisted of 3 patients with hypertension, 6 patients with known coronary artery disease, 4 of whom were using nitroglycerin therapeutically for anginal attacks, 1 diabetic patient with both coronary artery disease and moderate hypertension, 1 patient with rheumatic valvular heart disease with significant mitral regurgitation and mild aortic regurgitation, and 1 69-year-old patient subject to transient episodes of right hemiparesis associated with attacks of paroxysmal atrial tachycardia. Two of the coronary patients who used nitroglycerin were also considered to have occlusive cerebrovascular disease manifested in 1 by a past stroke with hemiparesis and subsequent attacks of dizziness and in the other by 2 recent attacks of cerebral ischemia with transient hemiparesis, the most recent of which prompted the current hospitalization. For comparison, a group of 10 normal men were examined in the same manner. They ranged in age from 25 to 52 years with a mean age of 34.5 years.

The study consisted essentially of determination of blood pressure (BP), pulse rate (PR), and, when possible, cardiac output by dye dilution method (CO) in supine position and after passive tilting on a fluoroscope tilt table to 80° from the horizontal both before and after administration of sublingual nitroglycerin (TNG). (One patient was aksed to stand up for the purpose of the test.) All subjects were carefully observed for evidence of cardiovascular collapse and symptoms of cerebral ischemia and were returned to horizontal position as soon as severe symptoms occurred. They were asked to describe their symptoms after completion of the test but were not warned in advance lest they might anxiously anticipate symptoms.

Blood pressures were determined with a cuff in 10 cases (8 normals, 2 patients) and recorded through an indwelling brachial arterial needle in the remainder. Statham P 23Db strain gauges were used, and they were taped firmly to the side of the chest so that their spatial relationship to the arterial needle remained unchanged upon tilting. Recordings were made on an Electronics-for-Medicine DR-8 Recorder. They were made both at normal and high electronic damping so as to obtain both the actual systolic-diastolic values and the mean levels. The simultaneously recorded electrocardiogram provided a record of pulse rate. All records were made continuously during tilt and at frequent inter-

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TABLE 1: Ranges and Averages of Blood Pressures, Pulse Pressures, and Pulse Rates in Both Groups of Subjects (Ranges in Parentheses)

		Before Nitroglycerine			After Nitroglycerine	
		Supine	Tilt	Supine	Supine	Tilt
Normal subjects	Pulse rate	75 (60–96)	88 (64–108)	74 (64–96)	85 (68–112)	114 (84–132)
	Systolic pressure	124 (90–170)	120 (95–160)	125 (110–170)	109 (75–130)	79 (40–100)
	Diastolic pressure	77 (55–105)	87 (60–100)	78 (60–100)	80 (55–95)	67 (30–86)
	Pulse pressure	47 (35–65)	33 (21–60)	47 (32–70)	29 (20–42)	12 (9–20)
	Remarks		No symptoms			Symptoms of cerebral ischemia in 4.
Patients	Pulse rate	68 (45–96)	75 (52–108)	64 (42–78)	74 (45–92)	93 (48–170)
	Systolic pressure	170 (120–220)	140 (55–200)	171 (115–220)	145 (95–195)	87 (0–150)*
	Diastolic pressure	81 (60–125)	74 (35–135)	80 (60–135)	78 (60–130)	52 (0–85)*
	Pulse pressure	89 (50–140)	66 (20–95)	91 (50–150)	67 (35–120)	35 (0–64)*
	Remarks		Lightheadedness in 1 case			Symptoms of cerebral ischemia in 9.

* Zero indicates unobtainable pressures when determinations were done with BP cuff.

vals at other times in the course of the procedure.

Patients were allowed to rest on the fluoroscope table for several minutes, during which the procedure was explained to them. Basal BP and PR were then recorded in the supine position. Cardiac output was obtained in 3 of the patients. Care was taken to assure a steady state before proceeding with the sequential phases of the study. Afterwards, subjects were tilted and the above determinations were repeated immediately after reaching the erect position. They were then brought back to the horizontal level and allowed again to achieve a steady state, at which time a second basal BP and PR were recorded. At this time TNG (0.2 to 0.8 mg.) was given sublingually. Exactly 4 minutes later the above parameters were recorded, both in the supine position and once again immediately following tilting. Whenever subjects complained of symptoms of cerebral ischemia, appeared perilously pale, or manifested twitching or early convulsion they were swiftly returned to the horizontal position. This procedure was sufficient to alleviate all the symptoms and prevent damage to the vascular system in all but 1 patient.

Results

Normal subjects. As depicted in table 1, the normal subjects experienced a modest rise in pulse rate and a greater fall in pulse pressure due chiefly to an elevation of the diastolic pressure after they were tilted into the upright position. These changes, though suggestive of a decreased cardiac output, were not associated with any symptoms. Administration of TNG to normal subjects who were kept in supine position led to some fall in systolic pressure, a rise in pulse rate, and a fall in pulse pressure accounted for by the fall in the systolic pressure. Tilting at the height of TNG effect resulted in a striking fall in blood pressure, greater for the systolic than the diastolic, and consequently a pronounced narrowing of the pulse pressure. Simultaneously, the pulse rate rose considerably. Five of the normal subjects exhibiting moderate deviations from the baseline values for BP and PR remained free of symptoms, while 3 others showing greater deviations complained of "heaviness," "stomach emptiness," nausea, "lightheadedness," and other similar symptoms attributable to cerebral ischemia. One of the control subjects became severely hypotensive, nauseated, ashen, diaphoretic and nearly unconscious, and was promptly returned to the horizontal position, whereupon all the symptoms quickly abated. Another normal subject with equally pronounced changes in his BP and PR remained asymptomatic.

Patients. Plane-tilting led to a modest fall in BP and a rise in PR to a degree commensurate with or slightly greater than the changes observed in the normal controls (table 1 and figure 1). The response to TNG in the supine position was analogous to that of the normal individuals. Tilting at the peak of TNG effect, on the other hand, resulted in deviations generally greater than those observed in the normal group. Although the fall in systolic pressure ranged from 9 to 23 per cent of the basal values in 3 patients, the remaining 9 patients exhibited striking falls ranging from 25 per cent of the basal value to an unobtainable pressure presumed to be zero. The average fall in systolic pressure in these 9 subjects was 56.4 per cent of the basal values. These drastic changes in hemodynamics resulted in alarming symptoms of cerebral ischemia culminating in convulsive seizures in 3 and transient hemiparesis in 1.

The following brief case presentations will provide a more detailed account of the events in 2 normal subjects and 6 patients.

Illustrative Cases

Case 1. R.M., a 38-year-old normal man, had a basal BP 115/85, PR 60/min.; tilt BP 110/85, PR 64/min.; second basal BP and PR 112/80 and 64/min.; after TNG: supine BP and PR 102/75 and 68/min., tilt BP 40/?, PR 140/min. (figure 1-A). He became nauseated and diaphoretic and developed a severe cardiovascular collapse when tilted after TNG. The symptoms promptly disappeared when he was returned to the supine position.

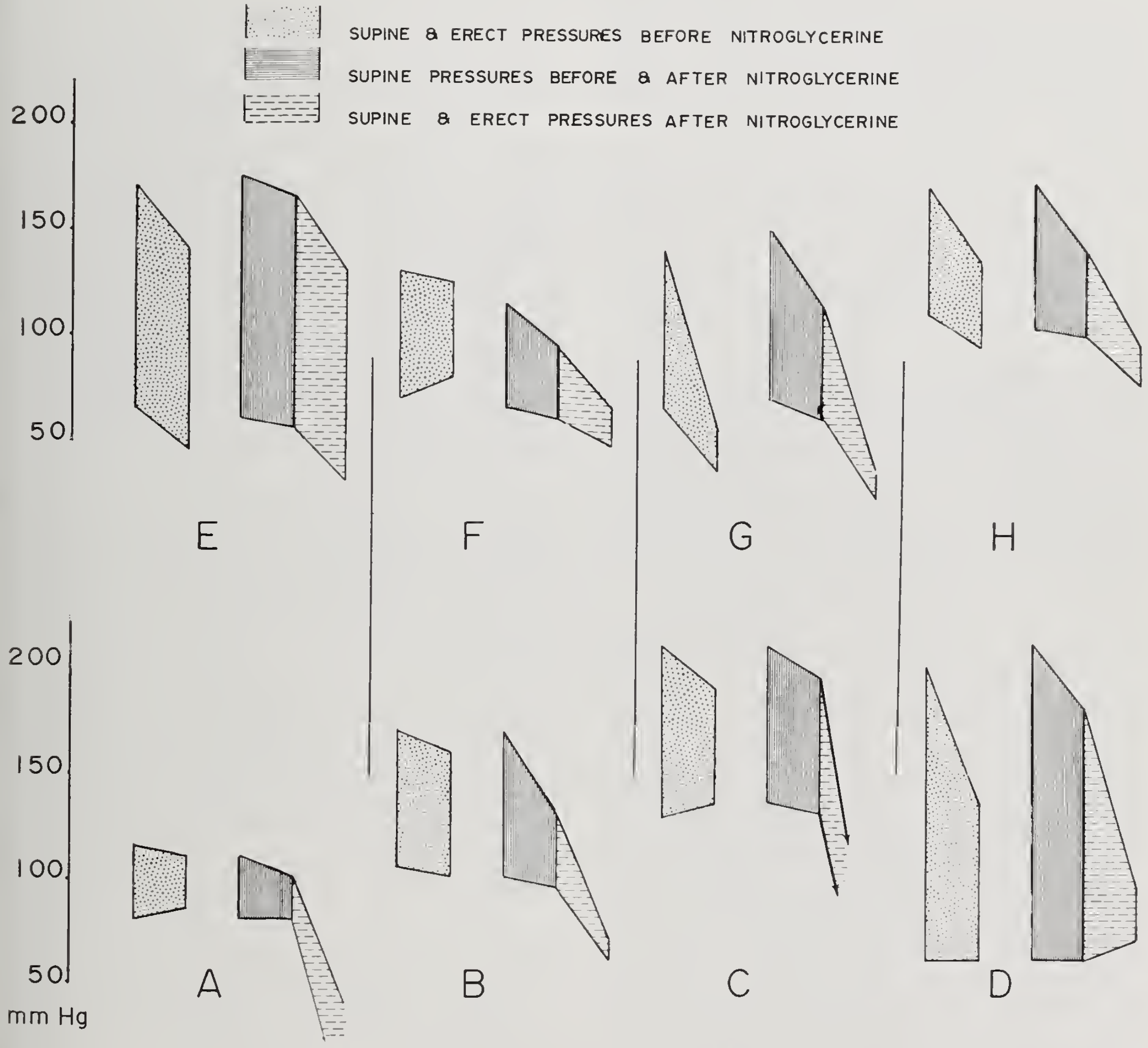

FIG. 1. Diagrammatic representation of blood pressure response in the 8 cases selected for individual presentation. Five blood pressure determinations are reproduced in each case. The first 2 readings separated by the stippled area on the left are the supine and erect BP readings before the use of TNG. The third and fourth readings separated by vertically hatched area represent BP readings before and after the use of TNG in the supine position. The fifth reading separated from the fourth by horizontally hatched area is that obtained at the time of post-TNG tilt. Downward arrows indicate unobtainable pressures.

This was an example of a very serious hypotension resulting from assumption of the erect position after TNG in a normal individual.

Case 2. T.W., a 52-year-old man with moderate hypertension but otherwise free of all cardiovascular and central nervous system symptoms, had a basal BP and PR of 170/105 and 96/min. His basal cardiac output was 7.5 L/min. Tilting before TNG changed these values very little. The basal supine values for BP and PR after 0.4 mg. TNG were 145/100 and 110/min. The cardiac output was 6.25 L/min. Post TNG tilt caused a fall in BP to 70/60. The pulse rate remained at 110/min., and the cardiac output likewise remained unchanged. He felt a "heavy" sensation but did not collapse. However, when the same test was repeated after another dose of TNG the BP fell to 42/35 and the patient developed syncope and generalized convulsive twitchings and was quickly returned to the supine position. His cardiac output on this occasion was still 5.0 L/min. (figure 1-B).

This is an example of a very severe vascular collapse resulting from tilting after average doses of TNG. The remarkable ability of the heart to maintain a cardiac output of 5 L/min. at the time of vascular collapse suggests a peripheral rather than cardiogenic origin for the collapse.

Case 3. B.B., a 42-year-old man with severe hypertension, had basal supine values of 215/125 and 76/min. and tilt values of 190/135 and 72/min. After administration of 0.4 mg. TNG, BP and PR were 195/130 and 92/min. Post TNG tilt made the BP unobtainable by the cuff. The pulse rate rose to 120/min. and the patient became syncopal with sweating and convulsive twitches (figure 1-C). Again, return to the horizontal position cleared all symptoms.

This was an instance of profound vascular collapse resulting from tilting after TNG in a severely hypertensive individual.

Case 4. L.B., a 74-year-old woman with coronary artery disease and receiving TNG for treatment of angina pectoris, developed symptoms of cerebral vascular insufficiency and was examined with reference to the advisability of TNG therapy. Basal supine BP of 200/60 fell to 130/60 upon standing without causing any symptoms. Administration of TNG after return to basal supine state produced a modest fall of BP to 180/60 which fell further to 94/70 upon standing (figure 1-D). She became shaky, felt numb, and developed speech difficulty and weakness of the left arm and left side of the face. Return to the horizontal position prevented further progression of the above symptoms which lasted for 24 hours before complete return to the pre-test state.

Symptoms identical with the spontaneously occurring episodes of cerebral ischemia appeared when this patient was tilted at the height of TNG effect and failed to disappear promptly after return to the horizontal level.

Case 5. M. G., a 59-year-old woman with known coronary and cerebral arteriosclerosis and who was taking TNG for relief of angina pectoris, complained of episodes of lightheadedness. Her basal BP was 175/65 in supine and 140/45 in erect positions. Respective values after TNG administration were 145/60 and 80/30 mm. Hg (figure 1-E). The sensation of lightheadedness was noted at this time and disappeared upon return to the horizontal position.

Mild symptoms of cerebral ischemia which constituted this patient's presenting complaint were reproduced by tilting after TNG administration. It is probable that the therapeutic TNG given her for angina pectoris was responsible for the same symptoms occurring spontaneously.

Case 6. E.H., a 42-year-old man with severe coronary artery disease, had noted a dizzy sensation upon standing. His basal BP, PR, and cardiac output values were 130/70, 96/min. and 7.4 L/min. respectively in the supine position and 125/80, 108/min. and 6.10 L/min. respectively in the erect position. Corresponding values after 0.2 mg. TNG were 95/60 and 84/min. in the supine position (no cardiac output) and 65/48, 72/min., and 5.4 L/min. in the erect position (figure 1-F). At this time the patient thought he was going to faint and was immediately brought to the horizontal position.

In this patient with severe coronary artery disease the blood pressure fell significantly but the cardiac output remained at a reasonable level, suggesting stability of the cardiac mechanism despite the peripheral vascular failure.

Case 7. J.S., a 61-year-old man with coronary artery disease, had basal supine values for BP, PR, and cardiac output of 140/65, 63/min. and 7.85 L/min. respectively and tilt values of 55/35, 84 and 4.7 L/min. respectively. This pre-TNG fall in BP was associated with a sensation of lightheadedness. After return of the parameters to the basal supine values 0.4 mg. TNG was administered and resulted in new values of 115/60 and 72/min. Post-TNG tilt caused a further drop of BP to 35/23 and the pulse rate rose to 84/min. (figure 1-G). Cardiac output determination could not be completed because of a convulsion necessitating immediate return to the horizontal level.

This patient with spontaneous orthostatic hypotension became further hypotensive after TNG administration and developed severe cerebral vascular insufficiency manifested by a convulsion after taking TNG.

Case 8. J.O., a 60-year-old man with high blood pressure and mild left ventricular failure, had basal supine values of 170/110 and 72/min. and tilt values of 130/95 and 72/min. After taking TNG the supine determinations were 140/100 and 72/min. and tilt values were 96/76 and 84/min. respectively (figure 1-H). He developed syncope, twitching and convulsive movements of the left extremities and fixation of the head and eyes to the left. Return to the horizontal position quickly reversed these findings.

Severe symptoms of cerebral ischemia with hemispheric predominance occurred as a result of a 44 per cent fall in BP in this hypertensive individual following tilting after taking TNG.

Discussion

The most important action of nitroglycerin, in common with the nitrites, is that of generalized dilatation of the smaller blood vessels, including the arterioles, capillaries and venules, with the effect being more marked on the post-arteriolar vascular bed.[1] The mechanism underlying the relief of angina pectoris remains controversial.[2, 3, 4] Of interest is the work of Marchetti et al[3] showing a greater increase in coronary flow in dogs if the aortic pressure is prevented from falling after TNG administration. That TNG may fail to relieve angina pectoris has been pointed out.[5, 6, 7] One might wonder if the accompanying untoward effects on blood pressure and peripheral circulation may not, in some cases, be sufficient to defeat the purpose of using the drug or even cause undesirable consequences. Notwithstanding this, a report attesting to the harmlessness of TNG appears in the literature.[8] However, reports of potential or actual side-effects outnumber by far those lauding TNG as an innocuous drug and demonstrate the occurrence of such phenomena as BP fall and collapse in a small but nevertheless significant number of cases.[9-16] Pertinent to these reports is that of Russek et al[17] in which they noted an increase in the positivity of exercise electrocardiograms in 10 per cent of cases in which TNG was administered before the test exercise and attributed it to such untoward extracardiac effects of TNG as pooling of blood in the peripheral veins giving rise to a reduction in cardiac output. A similar idea was expressed by Contro et al[16] who observed a paradoxical appearance of ischemia in the electrocardiogram after amyl nitrite inhalation and attributed it to a fall in the flow through sclerotic coronary arteries as a result of hypotension.

The fall of BP, particularly in the erect position, following the use of TNG has been reported.[2, 9, 12, 13, 14, 17, 18, 19] Alarming cardiovascular collapse and even coronary occlusion have been provoked by TNG.[9, 11, 14, 20, 21, 22] The existence of a greater risk among hypertensive individuals is suggested by reports of Prodger and Ayman[9] and of Lueth and Hanks.[14] The latter authors noted that maneuvers intended to increase venous return to the heart may counteract the hypotensive effect of TNG and suggested deep breathing and movements of the extremities. Russek et al[17] likewise found application of elastic bandages to the lower extremities useful in this respect.

Other toxic reactions to the drug include unconsciousness[22] and prostration with cold perspiration.[23] In one report the investigator administering the drug to himself became pulseless,[24] and Loeb[25] reported severe cardiovascular collapse from TNG administered in the usual dosage of 0.5 mg.

Although the above studies provide sufficient documentation of occasional alarming cardiovascular effects including syncope after the use of TNG, no reference to the severe cerebral ischemia accompanied by neurologic changes has been found save for the important report of Ronnov-Jessen.[19] One of his 3 patients became dizzy and fell; the other 2 patients developed hemiparesis after taking TNG. All of the 3 patients had taken the drug in the standing position, and severe hypotension in the face of cerebral arteriosclerosis was thought to be the mechanism.

In the present work the frequent occurrence of hypotension on assumption of the erect posture after the use of TNG, both in normal individuals and in patients with cerebral and coronary arteriosclerosis, has been adequately demonstrated. It has been shown that the fall in blood pressure may indeed be alarming and cause severe collapse ostensibly due to a reduction in peripheral vascular resistance. Of special interest is the potential for producing focal central nervous system manifestations and paresis in patients who have cerebral arteriosclerosis and that these manifestations may persist even after return to the horizontal position. Admittedly, the circumstances of the tests herein reported were not analogous to those of patients taking TNG for relief of angina pectoris. Nevertheless, the cases reported by Ronnov-Jessen[19] and our case 4 indicate that severe complications may occur spontaneously in patients taking TNG in the usual clinical setting. The low incidence of significant cerebrovascular and cardiovascular complications in the multitudes of patients taking TNG is indeed gratifying. However, it must be emphasized that the association of hemiparesis and other symptoms with the use of TNG is likely to escape detection unless such patients are specifically questioned. It is to be stressed, however, that patients taking therapeutic TNG are apt to be sitting or walking when the effect of falling peripheral vascular resistance will be less deleterious. In the tilting maneuvers of the test, on the contrary, all the muscles are relaxed and their contribution to venous return is abolished. This fact may indeed account for the low incidence of complications in the clinical setting.

Summary

A study of nitroglycerin-induced hemodynamic changes in both supine and erect postures in 10 normal control subjects and 12 cardiac patients has been reported. It has been found that TNG is capable not only of producing alarming orthostatic hypotension in both groups but also of causing focal or generalized manifestations presumably due to an acute cerebral ischemia. The clinical implications of these findings have been discussed. It is suggested that TNG be used with caution in patients with hypertension and particularly in patients with cerebral arteriosclerosis with ischemic manifestations. It is further suggested that such patients be instructed to remain in the sitting or supine position for several minutes after the use of the drug and rise with caution. Low starting doses should also be recommended.

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Ten Steroids Available: Which Is Best?

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THE DISCOVERY of the antirheumatic effects of cortisone by Hench[1] in 1949 introduced an entirely new type of therapeutic modality in the treatment of patients with rheumatoid arthritis and related diseases. The prompt, and usually complete, suppression of the inflammatory reaction in such diseases which results from adequate dosage of cortisone was soon found to be only one of many physiologic reactions which occur during administration of the drug. These have been thoroughly studied and reviewed in detail in many communications.[2, 3, 4] Because of their serious potential, chemists, biologists and clinicians have searched for other steroid compounds which might have equal or greater antiphlogistic qualities when compared to cortisone but which would have fewer "adverse" reactions. As a result of such investigations 10 steroid compounds are now available to the prescribing physician. Unfortunately, none has fulfilled the investigators' dream of a drug with therapeutic potential unhampered by disagreeable accompaniments. Indeed, the contrary is true, and although there are subtle differences in the reactions produced by the various drugs, all share the onus of inducing serious unpleasant side-effects, if used indiscriminately or over a protracted period of time.[4] Despite these shortcomings, steroid therapy has earned such a place in the care of many rheumatoid arthritics[4] that few clinicians would wish to manage any large series of cases without them.

The purpose of this paper is to outline the differences between the 10 steroid compounds currently available and to answer for the clinician who has decided to use this modality the question, "Which drug should be used in the particular case under consideration?"

Since clinical differences are related to specific variations in the structural formulae, a better understanding can be attained by a brief review of the essential chemistry.

The "steroid nucleus" consists of 4 modified benzene, or phenanthrene rings as depicted in figure 1. As noted in the right-hand drawing, each point represents a carbon atom, numbered to facilitate discussion. Alterations in the basic formula of greatest significance are produced by the creation of a "double bond" between 2 of the carbon atoms, or by replacing a hydrogen atom with a methyl grouping, an oxygen atom or a hydroxyl group (figure 2).

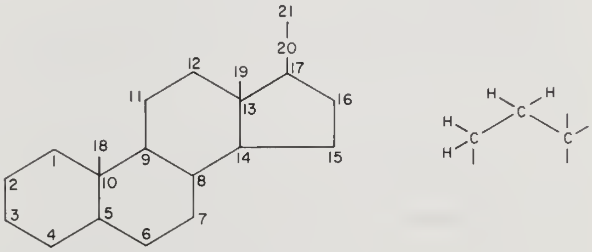

FIG. 1. Steroid nucleus.

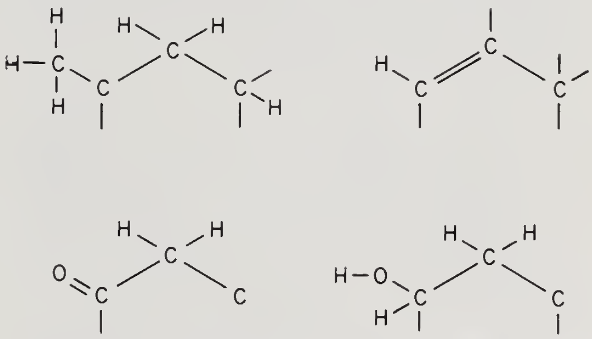

FIG. 2. Alterations of greatest significance in the basic formula.

Cortisone and hydrocortisone. It will be recalled that this steroid nucleus is the basis for many familiar hormones (figure 3). As can be seen, minor changes in the formula may produce major changes in the physiologic response of the resultant product. This fact was known long

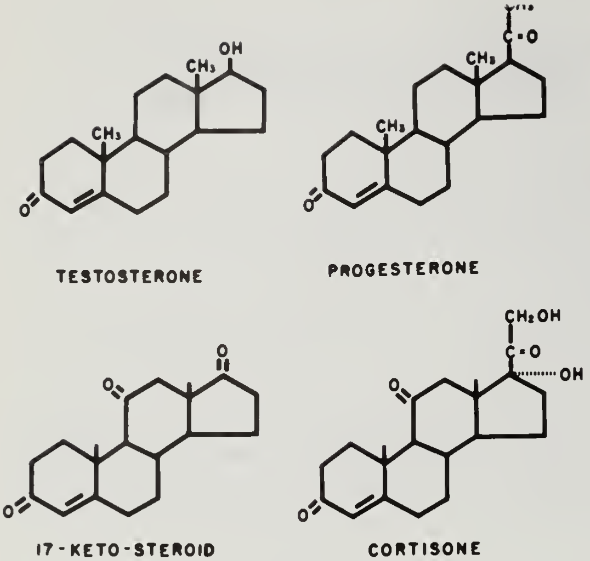

FIG. 3. Steroid nucleus as basis for 4 familiar hormones.

before the discovery of cortisone. Indeed in 1945, 4 years before Hench demonstrated the anti-inflammatory properties of cortisone in human beings suffering from rheumatoid arthritis, hydrocortisone (or "Compound F" as it was then designated) was shown to exert greater activity when the 2 were compared by muscle work tests, liver glycogen assays, and similar physiological examinations.[5, 6] This laboratory superiority proved to be significant, and when the drugs became available for clinical testing hydrocortisone was shown to be approximately 30 per cent more effective than cortisone in suppressing symptoms. Even more significant, it also demonstrated less tendency to cause mental excitation and edema.[7]

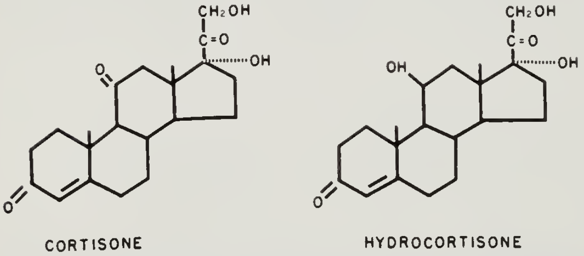

FIG. 4. Chemical formulae of cortisone and hydrocortisone.

Since the difference between these 2 naturally occurring hormones is only the substitution of a hydroxyl radical for the ketone group at the 11 position (figure 4), investigators concluded that new steroids having differing physiologic action could be produced by other changes in the basic formula. The first successful experimental alteration (so far as rheumatologists were concerned) occurred in 1953 when halogen atoms were inserted at the 9-carbon position, and a compound known as fludrocortisone was developed.[8] This was 10 times greater than the parent compound in its antirheumatic properties. Unfortunately, the sodium-retaining effect was about 20 times greater. And, although rheumatoid arthritic patients treated with the drug showed immediate clinical improvement, edema of such proportions developed within 2 to 3 days that the drug had to be abandoned.

But the question immediately arose, "Cannot some additional alteration of the formula be made to eliminate the adverse sodium-retaining property of the drug?" Several years later this was accomplished by producing changes at the 16 position. First, a hydroxyl group was substituted for the carbon and then a methyl, resulting in triamcinolone and dexamethasone. However, before this practical application of fluorination was accomplished another very important change had been brought about.

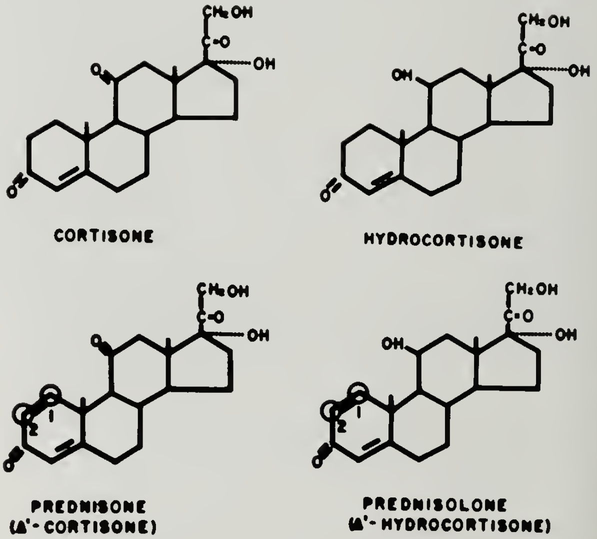

FIG. 5. Chemical formulae of prednisone and prednisolone developed from cortisone and hydrocortisone.

Prednisolone. In 1955 Herzog and his associates[9] introduced a double bond at the 1- and 2-carbon positions, creating compounds which were officially named "prednisone" and "prednisolone" (figure 5). This "dehydrogenation" was found to enhance the antirheumatic properties some 4 to 5 times. Furthermore, certain of the undesirable side-reactions of cortisone and hydrocortisone were lessened.[10] Thus, the laboratory work of a whole host of investigators was given new impetus. The financial reward was great, too, for within several years Schering's Meticorten® and Meticortelone® (the trade names given to prednisone and prednisolone) virtually preëmpted the steroid market, with a gratifying increase in the company's stock market quotations. Then, between 1955 and 1960 6 additional antiphlogistic steroid drugs of practical value were placed on the market, each representing a change in the formula at the 6, 9 or 16 position. Although rather extravagant claims have been made for various members of the group, none has been demonstrated to have a marked superiority over the others.

Prednisone and prednisolone are quite similar clinically. As noted in figure 5, the same relationship exists between these 2 compounds as exists between cortisone and hydrocortisone (indeed, prednisolone might have been called "hydroprednisone"). Nevertheless, the 30 per cent advantage of hydrocortisone over cortisone does not seem to have been carried over to the "delta-1" analogues. Our tests[11] several years ago indicated that when the 2 drugs were administered on a comparable basis 13 patients out of 19 preferred prednisolone, 3 preferred prednisone, and the other 3 rated the 2 as equal. Because of this balance of favor on the side of prednisolone, it would seem wise to adopt this as the drug of choice and to compare the other steroids to it.

In its ability to suppress activity in rheumatoid arthritic patients prednisolone is about 5 times as potent as cortisone and 4 times as potent as hydrocortisone.[12] The commercial tablet, which can be referred to as a therapeutic unit, therefore contains 5 mg. of the drug, whereas the cortisone tablet contains 25 mg., and hydrocortisone 20 mg. Since many of the undesirable physiologic properties are increased in like proportions, comparison of the drugs must be based on similar therapeutic units rather than on milligrams. These adverse reactions to prednisolone, as well as to other steroids, are quite variable and are related to 4 factors[13]:

1. Size of the daily dose
2. Length of time the drug is continued
3. Sex and age of the patient
4. Individual susceptibility.

Such variables must be kept in mind when comparing the various members of the steroid family.

The first advantage of prednisolone over cortisone is that more patients can be controlled over a longer period of time without losing therapeutic effectiveness or developing as severe side-reactions.[4]

Next, and probably of greater importance is the fact that side-reactions are generally less troublesome. Salt and water retention are significantly lower on prednisolone. Peripheral edema and elevated blood pressure are therefore much less common.[13] When the drug is continued any length of time, however, fluid retention in the omentum and gut occurs, giving abdominal bloating.

On the other hand, digestive complaints and peptic ulcers develop more frequently. Fortunately, these are usually responsive to an anti-ulcer regimen, including a bland diet, belladonna before meals, and nonabsorbable antacids between feedings.[14] Cutaneous ecchymoses, rarely noted during cortisone therapy, may be quite troublesome during the administration of all of the synthetic steroids.

Other undesirable reactions, such as facial mooning, fat pads, acne, hypertrichosis, and osteoporosis are about as common with one as with the other.[15]

At this point it seems appropriate to introduce another factor into the discussion, namely, the cost of medications.* When cortisone was first marketed the tablets sold for $1.00 each. Over several years the price was gradually reduced, but during the past 5 or more years it has remained rather constant and the tablet now sells for $18.00 a hundred, with hydrocortisone $26.00 for a similar amount. Prednisolone, however, can be purchased at a more reasonable figure. Schering, the original producer of the drug, still charges $25.00 per hundred tablets on prescription, but due to cross licensing, and certain patent disputes, other companies have dropped the price considerably. Upjohn's prednisolone can be purchased for only $4.15 per hundred, and some "non-brand names" are even less. Thus, a patient taking 10 mg. of prednisolone (2 therapeutic units) per day would pay $2.49 for a month's supply of that drug, whereas a patient taking 2 therapeutic units of hydrocortisone would pay $15.60 over a like period.

Therefore, prednisolone is preferred over cortisone because of the greater number of patients who can be controlled over a longer period of time, the lessened salt and water retention and potassium loss, and the price differential.

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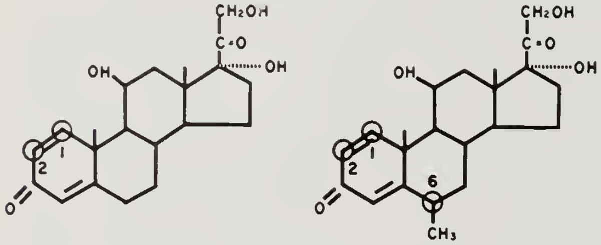
* Prices listed are those quoted by a large drug firm in Metropolitan Washington, D. C., October 1, 1964.

Methylprednisolone. Studies of the steroid nucleus have indicated that the 6-carbon position is important in metabolic oxidation. Investigators thought that it might be possible by substituting at C-6 to slow the enzymatic reduction which causes the inactivation of corticosteroids and thus increase the intensity and duration of their action.[16] As a result of such experiments a compound was developed in 1955 (figure 6) which was similar to prednisolone except for a methyl group at C-6.[16, 17] This is the product with the generic name "methylprednisolone" and marketed by Upjohn as Medrol®. Clinical assay indicates that, milligram for milligram, methylprednisolone is about 20 per cent more potent than prednisolone. The tablet is therefore marketed in doses of 4 mg. Therapeutically, in similar unit doses, or tablet for tablet, methylprednisolone seems approximately equal to prednisolone.[13] Here, too, when patients who have become tolerant of cortisone or prednisolone are shifted to comparable doses of methylprednisolone, clinical improvement often results. This, however, may be of short duration. It is our clinical impression that gastrointestinal upsets and peptic ulcers are fewer on methylprednisolone than on prednisolone. Furthermore, although the anticipated increased duration of action did not materialize, Upjohn has marketed the drug in a slow release form, called a "medule," the use of which permits patients to be maintained on 1 dose every 12 hours. Unfortunately, the price factor again is unfavorable, for the cost of the drug (tablet or medule) is $25.50 per hundred. A patient taking 8 mg. per day (or 2 therapeutic units) would pay $15.30 per month for this drug.

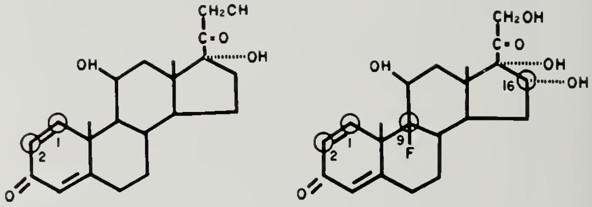


PREDNISOLONE (Δ'-HYDROCORTISONE)

METHYL PREDNISOLONE (6α-METHYLPREDNISOLONE)

FIG. 6. Chemical formula of methylprednisolone developed from prednisolone.

Triamcinolone. Earlier in this paper it was noted that adding a fluorine atom at the 9-carbon position greatly enhanced the antirheumatic properties of steroids but caused such increase in fluid retention as to make the resultant compound useless from a practical standpoint. When experiments indicated that the 16 position was the critical point in sodium retention, various attempts were made to alter the nucleus at this area. Eventually it was ascertained that the presence of a hydroxyl group at C-16 would drastically reduce this undesirable mineral-corticoid activity.[18] When the change was made in the prednisolone formula (figure 7) it was found that this substitution also reduced the gluco-corticoid or antirheumatic potency. However, adding the fluorine at 9 and a hydroxyl at 16 produced a compound whose sum-total had increased antirheumatic potency and less sodium retention. This is therefore 9 alpha-fluoro-16-methylprednisolone, the generic name of which is "triamcinolone" and which is marketed by Lederle as Aristocort® and by Squibb as Kenacort®.



PREDNISOLONE (Δ'-HYDROCORTISONE)

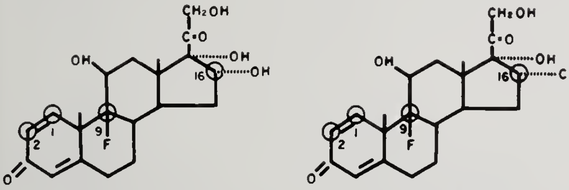
TRIAMCINOLONE (16α-HYDROXY, 9α-FLUOROPREDNISOLONE)

FIG. 7. Chemical formula of triamcinolone developed from prednisolone.

On a weight basis, triamcinolone (like methylprednisolone) is about 20 to 25 per cent greater in its antirheumatic properties than prednisolone. It is marketed in a 4 mg. tablet which can be regarded as the therapeutic unit. Two great advantages have been noted from triamcinolone. First, it has less tendency to salt and water retention than any other presently available steroid, and those who develop troublesome water retention on other steroids can usually be transferred to triamcinolone with rather prompt diuresis and striking relief from edema.[19] Second, it exerts unusual effects on the skin, and patients with psoriasis complicating rheumatoid arthritis will note marked amelioration in the skin lesions when treated with triamcinolone. This effect may be temporary and relapse may occur, but in psoriatic arthritis triamcinolone would seem to be the steroid of choice.[20]

Balancing these favorable attributes are several ill-effects. First is the fact that fewer patients seem to be maintained satisfactorily over a long period of time. Next, there may be troublesome anorexia with weight loss, fatigue and muscle cramps. Muscle wasting of significant degree occasionally occurs. Skin ecchymoses also seem to be more common than with other synthetic steroids.[13]

Finally, the cost of the drug is $21.50 per 100 tablets, making the monthly cost of the drug $6.90 to the patient taking 2 therapeutic units per day.



TRIAMCINOLONE (16α-HYDROXY, 9α-FLUOROPREDNISOLONE)

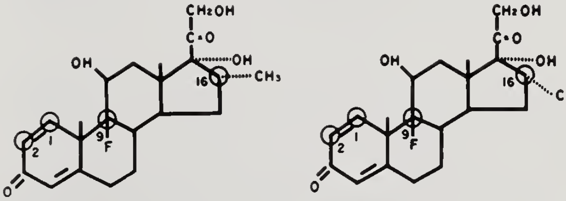
DEXAMETHASONE (16α-METHYL, 9α-FLUOROPREDNISOLONE)

FIG. 8. Chemical formula of dexamethasone derived from triamcinolone by substituting the methyl for the hydroxyl group.

Dexamethasone. Because of the reduction in therapeutic effectiveness resulting from addition of the hydroxyl group at the 16 position, further research was conducted in this area. In 1958 a methyl group was successfully substituted[21] (figure 8), and this too was found to reduce the sodium-retaining properties of the 9-alpha fluorinated compounds. However, an added bonus resulted—the antirheumatic properties were enhanced rather than reduced.[22] On a milligram to milligram basis, dexamethasone was found to have about 7 times the potency of prednisolone and the tablet forming the therapeutic unit index is therefore 0.75 mg.[23, 24]

Since most rheumatoid arthritic patients can be controlled on 1.5 to 2.0 mg. of dexamethasone per day, it was hoped that the side-reactions would be correspondingly reduced. This, however, has not been borne out, and when comparisons are based on the therapeutic units certain unfavorable side-reactions are found to be so much more common with this drug than with prednisolone that its clinical value is limited.[13] Most troublesome are abdominal bloating and distention and facial mooning. As with triamcinolone, ecchymoses and thinning of the skin over arms and legs may be extremely troublesome when the drug is continued any length of time. Most patients taking dexamethasone note increased appetite and weight gain. There are times when this is an advantage and will make it the steroid of choice. If continued, however, the weight gain may become a serious disadvantage.

The cost factor is interesting. The first dexamethasone was produced by Merck Sharp & Dohme and named Decadron®. This still sells for about $24.00 per hundred, 0.75 mg. tablets. Gammacorten® marketed by Ciba and Deronil® by Schering sell for $27.00 per hundred. But Hexadrol®, the Organon Company product, is only $12.00 for the same number of tablets. Even so, the patient taking 2 therapeutic units per day finds his drug bill $7.20 each month.



DEXAMETHASONE (16α-METHYL, 9α-FLUOROPREDNISOLONE)

BETAMETHASONE (16β-METHYL, 9α-FLUOROPREDNISOLONE)

FIG. 9. Betamethasone, similar in chemical structure to dexamethasone, but with 16 methyl in beta position.

Betamethasone. As demonstrated in figure 9, betamethasone is identical to dexamethasone except for the fact that the 16 methylation is done in the beta rather than the alpha position. This change,[21] which was accomplished in 1957, was at first believed to have enhanced the effectiveness of the compound about 20 per cent, and the drug was placed on the market in a 0.6 mg. tablet. Whether or not this is justified seems open to question.

As regards its clinical use, betamethasone seems quite similar to dexamethasone and the statements made about the latter seem equally true of the former.[25]

Only 1 pharmaceutical firm, Schering, produces the drug, calling it Celestone®. Its price is $25.70 per hundred tablets, and if we therefore consider each a therapeutic unit, the hypothetical patient on 2 units a day would pay $15.42 per month for his medication.

Fluprednisolone. Since the introduction of a fluorine atom at C-9 had caused increased antirheumatic activity, and since alterations at C-6 had brought about changes in enzymatic reductions, an attempt to halogenate C-6 appeared logical. This was accomplished in 1958[26] and it was found that the resultant compound (figure 10) was indeed more potent than prednisolone

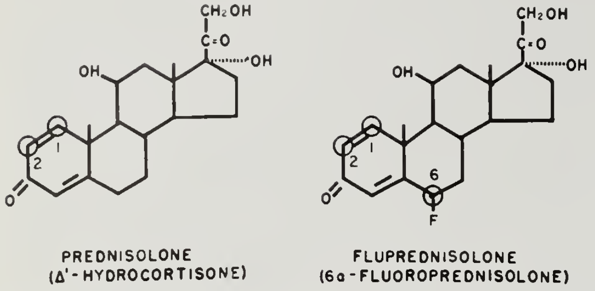


FIG. 10. Chemical formula of fluprednisolone as compared with prednisolone.

though less potent than those with the fluorine at C-9. Unlike the latter, however, this alteration did not disturb the electrolyte metabolism and no change was therefore made in its 16 position. On a milligram basis, 6 alpha fluprednisolone is about 3 times as potent as prednisolone,[27, 28] and the tablet marketed by Upjohn called Alphadrol® is 1.5 mg. Since 3 times 1.5 is 4.5, this makes the Alphadrol tablet somewhat less than a therapeutic unit compared with tablets of most of the other steroids. It appears that when therapeutic units are compared, it is about on a par with prednisolone. Furthermore, some patients who have become refractory to treatment with prednisolone will be again maintained on fluprednisolone. Of particular interest is the fact that facial mooning and supraclavicular or cervicodorsal fat depositions are less under this drug. Indeed, in cases in which this has become a problem the mooning and fat pads may decrease on transfer to fluprednisolone. Also excessive weight may be reduced.[27] The cost of this drug is $20.00 per hundred. To approximate the 2 therapeutic units of previous comparison, a patient would need approximately 2½ tablets per day, making the monthly cost $15.00.

Paramethasone. The last steroid which has become commercially available is, as one might surmise, a combination of features of the others, namely, fluorination at C-6 and methylation at C-16 (figure 11). It can therefore be said to resemble dexamethasone except that the halogen radical is at C-6 instead of C-9, or to resemble fluprednisolone with methylation at C-16. Since C-16 methylation increased the antirheumatic activity of the C-9 fluorinated drugs, it was thought it might do the same for the C-6 fluorinated ones. Actually, this is not quite the case. The resultant compound is approximately 2.8 times as potent as prednisolone, making it only slightly more so than fluprednisolone. The successful compounding of the drug was accomplished in 1960[29] and marketed by Lilly as Haldrone®, the tablet being 2 mg. Although clinical trials have been less extensive than with other steroids, studies to date show that it is quite similar to fluprednisolone but more apt to cause abdominal bloating and distention, as might be anticipated when one realizes that the change at 16 makes it resemble dexamethasone. Occasionally patients who have become refractory to prednisolone will improve under paramethasone.[13] Since the 2 mg. tablet sells for $26.00 per hundred tablets, 2 therapeutic units per day would cost the patient $15.60 per month.

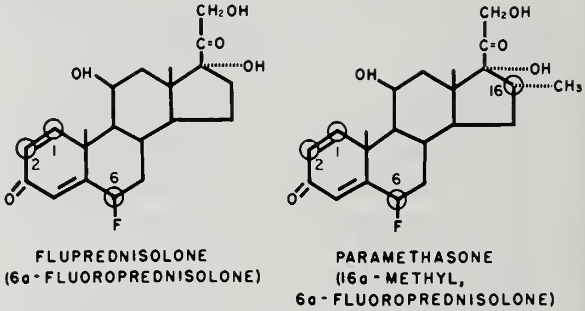


FIG. 11. Chemical formula of paramethasone, which resembles fluprednisolone, with change at the 16 position.

Combinations. Having reviewed the characteristics of the various steroids, one phase of their pharmaceutical distribution merits further comment. This pertains to the marketing of them (frequently in small doses) combined with other drugs, most commonly salicylates and antacids (table 1). The use of such products is unwarranted, since no synergism exists between salicylates and steroids, and the effec-

TABLE 1: Formulae of Four Proprietary Steroid "Combinations"

Aristogesic (Lederle)	
Triamcinelone	0.5 mg.
Salicylamide	325 mg.
Aluminum hydroxide gel	75 mg.
Ascorbic acid	20 mg.
Cordex Forte (Upjohn)	
Prednisolone	1.5 mg.
Aspirin	300 mg.
Decagesic (Merck Sharp & Dohme)	
Dexamethasone	0.25 mg.
Aspirin	500 mg.
Aluminum hydroxide	75 mg.
Sigmagen (Schering)	
Prednisone	0.75 mg.
Aspirin	325 mg.
Ascorbic acid	20 mg.
Aluminum hydroxide	75 mg.

tiveness of these combinations is equal only to the sum total of the contained compounds.

The main disadvantage in such a system is found where the steroid dose is decreased, for there is then an automatic and corresponding decrease in salicylates. These must, therefore, be prescribed in additional quantities to maintain adequate blood levels so necessary during periods of steroid curtailment. Furthermore, although gastric irritation may be lessened by the concomitant administration of antacids, all other adverse effects are as common as with comparable doses of steroids alone.

Summary

Ten steroid drugs are now available to the physician for the treatment of rheumatoid arthritis, when it is determined that such therapy is indicated. The variations in chemical formulae as well as in clinical reactions have been discussed. The perfect steroid has not been found, but prednisolone is probably still the drug of choice, both from the expected therapeutic results and the lower cost to the patient. A suggested pattern for treatment follows:

1. Start with prednisolone, ½ tablet, 3 times a day, spaced at about 8 a.m.—2 p.m. —10 p.m., the patient thus receiving 7.5 mg. per day.
2. If satisfactory control is obtained, continue for 1 week and then begin to decrease.
3. If satisfactory control is not obtained, increase the morning dose to 5 mg. for 1 week. If adequate control is still not obtained, increase the afternoon dose to 5 mg.
4. Do not exceed a total of 12.5 mg. per day.
5. If satisfactory control is not obtained, or if the patient is at first controlled and later is not, shift to another steroid, either methylprednisolone or fluprednisolone.
6. If the patient develops persistent gastric distress, shift to methylprednisolone.
7. If excessive fluid retention develops shift to triamcinolone until relieved, then to another steroid.
8. If weight loss and weakness occur, shift to dexamethasone.
9. If excessive weight gain develops, shift to fluprednisolone.
10. If excessive skin ecchymoses develop, shift to cortisone.
11. If psoriasis is present, use triamcinolone.
12. If excessive facial mooning develops, shift to fluprednisolone.

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The Approach of the Cockroach to Allergy*

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For many years the role of stinging insects has received much attention from the allergist and biochemist because of its tragic and dramatic aspects. A recent report by Bernton and Brown,[1] however, calls attention to the allergic potential of a domiciliary pest, the cockroach. Their studies have been limited to the American cockroach, *Periplaneta americana*, and to the Oriental cockroach, *Blatta orientalis*.

Their findings and conclusions were:

1. Seven and five-tenths per cent of 253 normal persons show positive skin tests with extracts of cockroaches, as compared with 28 per cent of an unselected group of 114 allergic patients.
2. Skin-sensitizing antibodies are present in the blood sera of positive reactors.
3. Cockroach allergen has the capacity to sensitize.
4. Cockroach allergen has the capacity to provoke constitutional reactions in reactors.
5. Cockroaches contaminate food substances with an allergen.
6. Cockroach allergen is thermostable.
7. The possibility that the cockroach allergen may be of the ingestant or injectant variety must be given critical consideration.
8. The advisability of adding cockroach allergen to the routine tests of allergic patients is clearly indicated.
9. Desensitization with cockroach extract as the sole or as an adjunct therapeutic measure may reduce the number of refractory allergic patients, especially of those living in an insect-infested environment.

It is noteworthy that 4 of this group of allergic patients have reacted only to the extract of the cockroach and not to any of the allergens used in routine tests.

We are now confronted with the problem of determining by what route or routes sensitization of humans to cockroaches is effected. The experience of the past with insect allergy enables us to formulate some concepts. The role of the Hymenoptera as sources of injectant-allergen has long been recognized. The first record of a fatality resulting from a sting of a hornet or wasp dates back to 2641 B.C. Such was the cause of death, depicted by the hieroglyphics on the tomb of King Menes of Egypt.[2] Another concept, that of inhalant-allergen, was developed as the result of Figley's observation.[3] As early as 1929 he reported 4 cases of asthma due to sensitivity to the May fly. Sensitivity to the sand fly or caddis fly was later reported by Parlato[4] in 1930, and in 1938 Kern[5] added the mushroom fly to the list as a causative factor.

More extensive studies of this phase of the subject have been conducted during the past decade with a larger variety of insects. Feinberg and his co-workers[6] in 1956 observed that 65 per cent of a group of patients with seasonal asthma gave positive reactions to tests with reagents such as ant eggs, house flies, bees, and mosquitoes. Their conclusion is noteworthy: "Recent findings have indicated that dust from disintegrated insects may constitute a common type of antigen responsible for asthma and hay fever."

In 1958 a notable contribution was made by Perlman.[7] He found that approximately ½ of 252 allergic patients, tested by the scratch method, reacted positively to several insect allergens. The percentage of positive reactions increased to 65 when intradermal tests were performed on doubtful cases. He utilized extracts of 35 individual insects and significantly added: "Insects as inhalant allergens fulfill the postulates set down for pollinating plants causing hay fever and asthma." He realizes, however, that evaluation of insects as inhalant allergens is a difficult task because no means have been devised to detect insect allergens in the air.

We must now determine the applicability of all these observations to cockroaches. A survey, therefore, of their habitats and habits is essential for formulating judgments. There are more than 3,500 known species of cockroaches widely dispersed over the globe. In the United States there

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* This study was supported by a grant from the John A. Hartford Foundation, Inc., New York, N. Y.

are 55 species, of which only 5 can be regarded as pestiferous.[8] During daylight hours cockroaches hide in sheltered places, but at night they become active in search of food and water. They move rapidly and show migratory tendencies. Some species have been found to migrate from their breeding places in sewers and dumps to adjacent buildings and homes. Accordingly, they present a constant problem to food-handling establishments, such as dairies, food- and meat-packing plants, mess halls and restaurants. Even the kitchens of modern apartment houses do not escape infestation.

The diet of cockroaches is not a restricted one. They are omniverous. They eat everything that man eats, wears, or otherwise uses. Even biologic waste products, such as garbage and sewage, provide sustenance; and to these may be added their own cast-skins and dead companions.[9] To allergists the most significant phase of their activity is the contamination of food not adequately protected. This contamination consists of feces, vomitus, and dead insects.

Of equal interest are the many references in the literature to bodily contact with cockroaches, particularly in tropical areas. There are records of cockroaches crawling over the faces of sleeping persons, attracted to them by the odor or taste of food or drink on the mouth and lips.[10] Professor Moseley's account of his experience may well serve as an illustration. He referred to the annoyance caused by the attention of a large species of cockroach while on board the *H.M.S. Challenger.* "He bothered me much," he writes, "because when my light was out, he had a familiar habit of coming to sip the moisture from my face and lips, which was decidedly unpleasant, and often woke me from a doze. I believe it was with this object that he watched me before I went to sleep." Consequently, it is not surprising that skin lesions, such as certain linear dermatoses in the Tropics, herpes simplex, and edema of the eyelids have been attributed to this contact with the insects. Pavlovskii and Shtein[11] have described the toxic effects of the insect's saliva when applied to areas of scarified skin.

A case in point is that of a female employee of the Bureau of Entomology, aged 56 years. For the past 5 years she has worked in the laboratory in which the potency of various insecticides for cockroaches is being studied. After 2 years of such employment she observed that contact with only 1 species of cockroaches, *Leucophaea maderae,* caused itching of her hands. An eruption of papules also appeared on the dorsal aspect of her hands and arms. The lesions did not appear above the elbows. This case of contact dermatitis denotes an allergic reaction of occupational origin.

Another activity in which cockroaches are engaged is that of biting. The literature records many instances of traumatic lesions caused by the bites of cockroaches. The most vivid account is that given by Heiser.[12] In 1915, while traveling on a ship of the Union Steamship Line, he made the following observation: "In addition to rats, the ship carried a full complement of roaches. They would run over the tables, even in the daytime. But they had compensatory attributes. No chiropodist could have made his living on this line. Passengers who were afflicted by corns would find them neatly removed by morning. The roaches would gnaw down until they reached a sensitive spot, the foot would then automatically be moved, and thus disturbed, they would scamper off."

The habits of cockroaches of crawling over human beings and biting some of them provide 2 possible routes for the transfer of their allergen or allergens, either by injection or by contact.

It must be borne in mind that this bodily contact between man and cockroaches exists not only in tropical zones but also in temperate zones where control measures are inadequate. This is particularly true of slum apartments in our metropolitan areas. In New York City,[13] for example, the living habits of certain ethnic groups have a decided influence upon the extent of cockroach infestation. Accordingly, the eating habits of the insects assume importance. It must be emphasized that cockroaches have a predilection for human food. Thus the contamination of food, dishes, and food preparation surfaces is inevitable. In our investigation we have shown that cockroach allergen is present in food partially consumed by the insects and that the cockroach allergen is not affected by a temperature of 100° C for 1 hour. The cooking of foodstuff does not destroy its allergenicity.

The deduction that the cockroach allergen is also an ingestant allergen is warranted by our findings. Accordingly, failure to test allergic patients with insect allergens may account for incomplete diagnosis and inadequate treatment. In the recent literature the concept of inhalant allergens of insect origin has been stressed to the exclusion of other possibilities. Our findings indicate that the role of insects as sources of ingestant allergens invites further exploration.

Our initial studies have of necessity been restricted to the cockroaches. From the evidence at hand we may conclude that in some instances symptoms attributable to food allergy may be due to the food-contaminant.

In June 1963 the first International Congress of d'Allergie Alementaire et Digestive was held in Vichy, France. Of the 47 papers presented, 1 paper, entitled "Some Experimental Results and Personal Considerations on Dietary and Digestive Allergy," by Lopes, Masquelier and Jensen[14] of Bordeaux is of timely importance. The authors state: "We have studied allergies of various origins, in particular the insidious and frequent allergies provoked by food-contaminating agents, whether chemical (derivatives of salicylic acid, terpene, etc.) or biological (moths, shellfish, fungi)." Accordingly, the incrimination of insects with foods in allergic reactions makes this paper noteworthy because of its rarity.

The infestation of foods by insects, however, has long been a major and constant concern to the food industry. It has been stated that at least 50 per cent of the wheat in commercial marketing channels may carry varying degrees of insect infestation.[15] Agricultural chemists have devised means of measuring and controlling the insect contamination of wheat, wheat flour,[16] corn and corn meal, and other food products.[17] These measures have been necessitated by the requirements of the United States Food, Drug and Cosmetic Act. The Food and Drug Administration has formulated standards of purity.[18] Warnings against insect infestation are repeatedly sounded. The definition of insect infestation of nuts, for example, may well prove to be of value to the allergist as well as to the industry. It reads: "Nuts are insect-infested if they contain live or dead insects, whether larvae, pupae, or adults, or if they show definite evidence of insect feeding or cutting, or if insect excreta pellets are present."

Our work with the cockroach paves the way to determine the allergic potentials of other insects associated with food infestation. The present era is indeed a counterpart of that of mold allergy of 35 years ago.

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Invasive Squamous-cell Carcinoma of the Vagina Following Surgery for Carcinoma in Situ of the Cervix

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THE DELAYED APPEARANCE of invasive carcinoma in the vaginal vault subsequent to surgery for carcinoma in situ of the uterine cervix is demoralizing to the surgeon, impugns the professional ability of the pathologist, and is apt to prove lethal to the patient. The development of this complication is not a new experience. Numerous cases of in situ and invasive carcinoma occurring in the vagina subsequent to treatment of Stage 0 carcinoma of the cervix have appeared in the literature. However, the true incidence of this development is still unknown. Available statistics indicate an incidence range of from 0.7 to 6.6 per cent.

Graham[1] reported 5 cases of vaginal recurrence of carcinoma in situ among 75 patients treated by hysterectomy from 1939 to 1947. Carter et al[2] reported 2 patients in a series of 151 cases of carcinoma in situ of the cervix, with invasive cancer of the vagina developing 2 to 4 years after surgery. Funnell and Merrill[3] found a local recurrence in 5 patients in a series of 73 treated for in situ cancer from 1956 to 1962, an incidence of 6.8 per cent.

The late-appearing lesions of invasive cancer developing in the vaginal vault 1 or more years after surgery for Stage 0 cancer of the cervix, the so-called recurrent cancer, are true primaries and develop from other areas of carcinogenesis in an already sensitized epithelial field. This is the multicentric origin of carcinoma arising in the female anogenital tract.[4] In this concept in situ carcinoma always precedes manifest epidermoid cancer. When invasion occurs the antecedent in situ phase is obscured or forgotten.

Whatever the true pathogenicity of this development, invasive cancer of the vaginal vault after the treatment of Stage 0 cancer of the cervix is a serious complication and often fatal to the patient. To elucidate the problem more clearly and to reëmphasize the seriousness of in situ carcinoma, the case histories of 3 patients with delayed invasive cancer following surgery for Stage 0 carcinoma of the cervix are presented.

Report of Cases

Case 1. A white woman 59 years old was first seen on November 21, 1951, for a brownish vaginal discharge and sore urethra. A bilateral salpingo-oöphorectomy had been performed in 1924 and an appendectomy in 1934. In 1950 a tumor had been removed from the urethra.

Pelvic examination revealed an atrophic vulvovaginitis and urethral caruncle. The vaginitis was particularly marked in the vault, and there was a slightly blood-tinged vaginal discharge. The cervix was present and bled when manipulated with a cotton-tipped applicator. Papanicoloau smears were reported as Class IV.

Cervical biopsy on December 3, 1951 revealed in situ carcinoma. The patient was hospitalized, and on December 12, 1951 a total abdominal hysterectomy was performed. The surgical specimen revealed retrogressive hyperplasia of the endometrium and in situ carcinoma involving levels 2, 3, 4, 5 and 6 of the cervix.

The patient returned in February 1956 complaining of vaginal bleeding. Examination at that time revealed a less than 1 cm. lesion on the left posterior vaginal wall, grossly positive for carcinoma. Biopsy of the lesion revealed invasive epidermoid carcinoma (figure 1). The patient was hospitalized and on March 6, 1956 a partial vaginectomy and a bilateral pelvic lymphadenectomy were performed. The surgical specimens were diagnosed as primary squamous carcinoma of the vagina with negative lymph nodes. Areas of in situ carcinoma were present in the margins of the vaginal growth.

On May 23, 1956 the patient was again seen, this time for edema of the right leg. Exploration on May

30, 1956 revealed inoperable right lateral-wall disease. Radiation therapy failed to control metastasis and the patient died on February 1, 1959 with widespread disease.

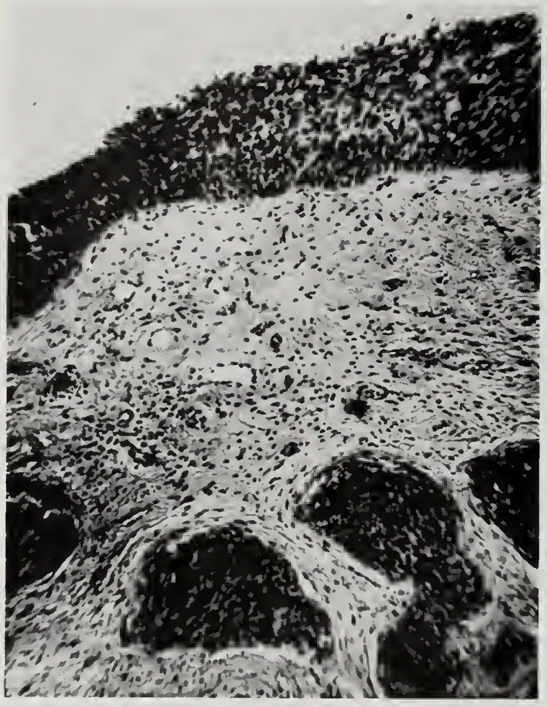

FIG. 1. Case 1. In situ and invasive epidermoid carcinoma of the vaginal vault subsequent to surgery for Stage 0 of cancer of the cervix.

Case 2. Mrs. E.B., a white woman 45 years old, had in situ epidermoid carcinoma of the cervix diagnosed by biopsy on June 3, 1957. A prior Papanicolaou smear had been reported as Class IV. On July 8, 1957 a total abdominal hysterectomy was performed. The surgical specimen revealed residual areas of in situ epidermoid carcinoma of the cervix. In May, 1961 the patient returned to her physician complaining of vaginal bleeding. A granular lesion in the vagina was cauterized with the live cautery. In May, 1962 the patient was hospitalized for profuse vaginal bleeding. Examination at that time revealed a 1½ cm. lesion in the vaginal vault, grossly positive for carcinoma. Biopsy of the lesion on May 18, 1962 revealed in situ and invasive epidermoid carcinoma (figure 2). On June 5, 1962 an anterior evisceration with transplantation of both ureters to the rectosigmoid colon was performed. The surgical specimen revealed invasive epidermoid carcinoma with perineural lymphatic invasion and extension into the wall of the bladder. During July 1962 the patient developed a large pelvic abscess which was drained through the lower pole of the midline incision. A short time later the patient began draining urine through the vagina and was found to have a right ureterovaginal fistula. On August 30, 1962 the right ureter was re-anastomosed to the sigmoid colon, and a transverse colostomy was established. The patient made an uneventful recovery, and after a period of convalescence the colostomy was closed on November 27, 1962.

In January 1964 while under severe emotional distress the patient developed her first episode of hyperchloremic acidosis. She was hospitalized and in undergoing treatent for this condition developed a small bowel obstruction which necessitated surgery. At the time of the surgery freeing this obstruction a transverse colostomy was established in the belief that it would facilitate the management of the electrolyte problem. This arrangement worked well until March, when the patient revealed reflux urine flow through the transverse colostomy. During the latter part of March she again went into hyperchloremic acidosis and was rehospitalized. Under constant rectal drainage and intravenous fluids she was put back in electrolyte balance. During this hospital stay a necrotic ulcer was removed from the lateral aspect of the right hip. In spite of vigorous measures the retrograde reflux of urine through the transverse colostomy could not be prevented, and the patient's electrolyte balance was very difficult to maintain.

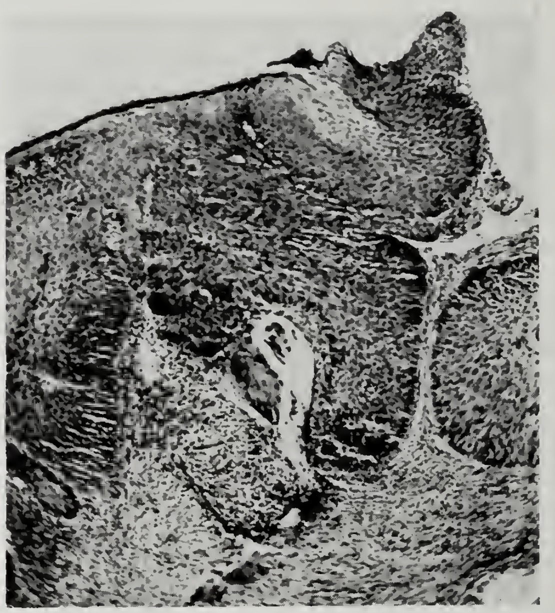

FIG. 2. Case 2. Invasive carcinoma of the vaginal vault subsequent to surgery for Stage 0 of cancer of the cervix.

On March 30, 1964 the patient was explored and the sigmoid colon mobilized and divided proximal to the area of ureteral anastomoses. The distal end of the divided colon was closed and a rectal pouch thus constructed. This end, together with the proximal end of the divided colon, was brought out to the abdominal surface through a left lateral rectus incision. The patient did well following the surgery except for the development of a small urinary fistula through the exteriorized end of the rectal pouch. This eventually closed spontaneously.

The patient's general condition has improved with satisfactory weight gain since the last procedure.

A profile of blood chemistries in August 1964 revealed the urea nitrogen to be 14 mg./100 ml. (normal 10–20), CO_2–28.0 mEq./L, chloride 108 mEq./L, sodium 145 mEq./L, and potassium 5.3 mEq./L.

The patient has nearly normal urinary control through the anal sphincter but is obliged to empty the rectal pouch 3 or 4 times during the night. A closure of the transverse colostomy is planned for the near future.

Case 3. Mrs. F.G., a white woman aged 59 years, gravida IV, Para III, was referred on August 4, 1964 for consideration of a suspicious lesion in the vaginal vault. Papanicolaou smears obtained during routine physical examination in July 1964 had been reported as Class IV. Pelvic examination at that time had revealed a suspicious granular-appearing lesion in the vaginal vault. There had been a total abdominal hysterectomy and bilateral salpingo-oöphorectomy for carcinoma in situ of the cervix in 1958.

The patient remained well following the surgery and is asymptomatic at the present time. Pelvic examination revealed moderate atrophic changes of the vulva and vagina. There was an area of granular-appearing vaginitis on both anterior and posterior surfaces of the vaginal vault which was approximately 2 cm. in depth and extended across the entire width of the vagina. Biopsies from this area subsequently revealed carcinoma in situ with areas of early invasion.

The patient was hospitalized and on August 21, 1964 a partial vaginectomy performed. The report on the surgical specimen revealed intra-epithelial carcinoma of the vagina (figure 3). Mrs. G. made an uneventful recovery after the surgery and is now doing quite well.

Method of Treatment and Results

The surgical methods used in this series were partial vaginectomy and pelvic lymphadenectomy in 1 (case 1), anterior pelvic exenteration with pelvic lymphadenectomy and bilateral ureterosigmoidostomy in 1 (case 2), and partial vaginectomy in 1 (case 3).

One patient (case 1) developed inoperable right lateral-wall disease 3 months after the surgery. Radiation therapy failed to control her disease and she died 34 months later with widespread disease. One (case 2), treated by anterior exenteration and bilateral ureteral anastomosis, after a series of complications including drainage of a pelvic abscess, correction of a ureterovaginal fistula, 2 attacks of hyperchloremic acidosis, surgery for small bowel obstruction, and, finally, construction of a rectal pouch, remains alive without evidence of disease at 30 months after the surgery. Sufficient time has not elapsed to predict the outcome for the third patient (case 3), but Papanicolaou smears are negative at this time.

Discussion

The 3 patients in this series are additional examples of invasive epidermoid carcinoma occurring in the vagina subsequent to hysterectomy for Stage 0 cancer of the cervix. In each case carcinoma in situ of the cervix was diagnosed by cytologic slides, confirmed by biopsy, and treated by total abdominal hysterectomy. Serial sections of the cervices in the surgical specimens failed to reveal any evidence of invasive carcinoma. After long intervals, 63 months, 59 months, and 77 months respectively, the Papanicoloau smears were positive, and a new lesion in each case was found in the vaginal vault. The diagnosis by biopsy was invasive epidermoid carcinoma. Tissue sections from all 3 surgical specimens revealed contiguous areas of in situ and invasive carcinoma. The coëxistence of premalignant epithelium with the invasive lesion suggests the idea of a new primary and is in keeping with the present-day hypothesis of multiple foci of carcinogenesis.

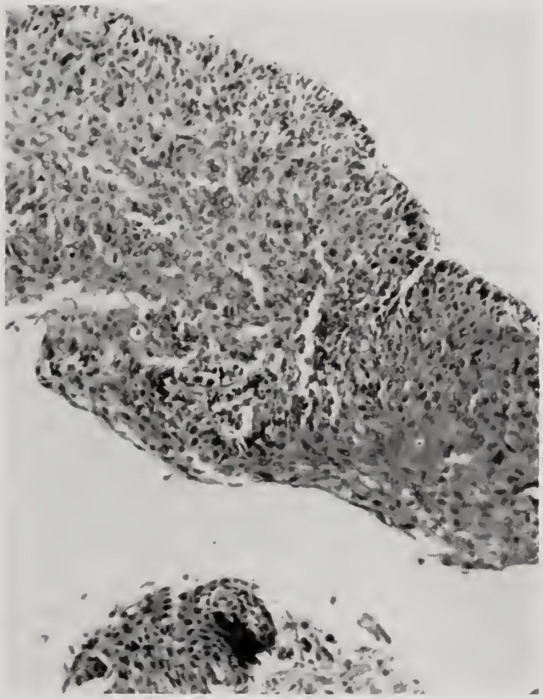

FIG. 3. Case 3. In situ epidermoid carcinoma of the vaginal vault appearing 6½ years after surgery for Stage 0 of carcinoma of the cervix.

It is quite apparent from this study that hysterectomy for Stage 0 cancer of the uterine cervix does not preclude the subsequent development of in situ or invasive carcinoma of the vaginal vault. The clinical implications in the

(*Continued on page 156*)

"My Feet Are Killing Me"

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THE SURGICAL TREATMENT of painful feet represents one of the important facets of orthopedic surgery. The more common foot complaints involve the anterior portion of the foot, known as the forefoot, and this discussion will be directed primarily at this area. All aspects of foot treatment cannot be considered in this manuscript, and this discussion will not include the conservative treatment of foot problems including corrective shoes, supports and padding, nor will it include the major surgical reconstruction problems such as extensive arthrodeses and major tendon transfers for paralytic deformities.

The painful forefoot is much more common in women than in men, and it may be presumed that constrictive footwear is largely responsible for this difference, since in other respects there is little difference in the anatomy or development between the sexes. Most pain in the foot is due to excessive local pressure or uneven distribution of pressure, either on the weight-bearing surface or on the top or side of the foot. Pain may also be due to intrinsic disease, abnormal strain, or arthritis with associated swelling, rigidity, or dislocation of joints.

Examination of the foot requires careful observation of stance and gait and thorough palpation and manipulation of the entire foot, including the multiple joints. Painful callosities, corns, hammertoes and bunions can be readily observed. Synovitis of a metatarsophalangeal joint can be detected by vertical compression of the joint between 2 fingers. Interdigital neuroma is diagnosed from a careful history and by palpation of the interdigital area. Dislocation of the toes and arthritis are detected by palpation and manipulation. Muscle testing to determine weakness requires manual resistance to active movement. Although roentgenograms are essential for a complete diagnosis, most problems of the forefoot can be diagnosed from the history and physical examination.

Brief reference will be made to injection therapy in the areas where specific relief may be obtained. Injection of cortisone into callosities or corns is not recommended. Local pain and tenderness on the plantar aspect of the heel are due to local trauma and often involve a bursa which may be demonstrated when the area is injected. Pain is often erroneously attributed to a spur on the plantar aspect of the heel. Such spurs lie longitudinal to the plantar fascia and muscles and above the weight-bearing surface of the heel and do not contribute to the pain (figure 1-a). Their removal is not indicated. Injection of procaine deep into the painful area immediately below the bony prominence will often result in the return of the fluid through the needle, indicating that a cavity (bursa) exists (figure 1-b). Injection of 3 c.c. of procaine followed by 0.5 c.c. of hydrocortisone usually gives relief. Synovitis of 1 of the metatarsophalangeal joints, usually the second or third, produces pain simulating metatarsalgia or interdigital neuroma (figure 1-c). It is demonstrated by severe pain on local vertical pressure on the joint between the thumb and index finger. Relief is obtained by injection of a local anesthetic and steroid into the joint in a quantity which does not produce overdistention. Pain and tenderness are often pronounced along the tibialis posterior tendon and especially at its insertion, where the lesion may be considered a local tendonitis, and this is relieved by injection into the tendon insertion (figure 1-d). Tenosynovitis along the tendon posterior to the medial malleolus responds to injection into the tendon sheath (figure 1-e). There is usually associated pronation and weakness of the tibialis posterior muscle, and corrective exercises and supports should also be prescribed.

In the surgical approach to the painful foot it is presumed that conservative measures have been given an adequate trial and that pain still persists which justifies surgery. Interdigital neuroma is due to enlargement of the interdigital nerve, usually between the third and fourth

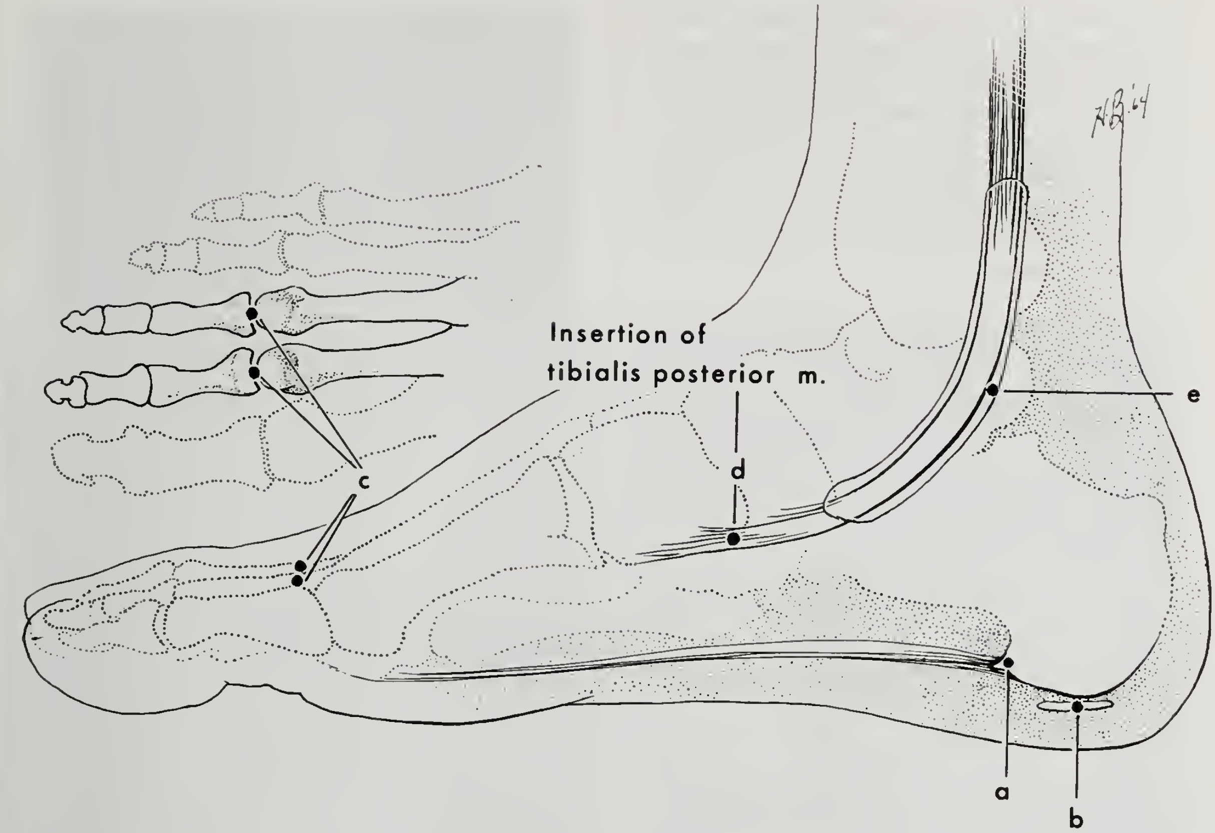

Fig. 1. Painful areas in the foot commonly relieved by injection of local anesthetic and steroid.

metatarsals but not uncommonly between the second and third (figure 2). The lesion may occur bilaterally or at both areas in the same foot. The classical history is that of the patient who incurs sudden sharp pain radiating to the involved toes while wearing shoes and the pain is relieved only by omitting shoes or by sudden removal of the shoes and manipulation of the forefoot. However, there are many variations in the history, and each case requires individual analysis. The lesion is very often missed and has been confused with metatarsalgia, vascular disease, gout, or psychoneurosis. Relief is almost assured by surgical excision of the enlarged area of the nerve through a dorsal incision.

Intractable corn, usually overlying the proximal joint of the toe and associated with some degree of dorsal deformity or hammertoe, is best relieved by removal of the head of the proximal phalanx through a small dorsolateral incision. If only 1 or 2 toes are involved, surgery can be performed under local anesthesia. Soft corn is found between the toes where the skin is compressed and macerated between the bony surfaces of 2 toes. Relief is obtained by excising the bone underlying the corn or bone in the apposing toe which is contributing to the pressure. There are 2 sesamoid bones under the first metatarsophalangeal joint, and often excessive pain is present under 1, usually the medial sesamoid. When this is not relieved by other means, removal of the sesamoid gives effective relief. Severe pain and tenderness under one of the metatarsal heads is due to excessive local pressure. This may require the excision of the condyle (inferior portion of the metatarsal head) or in some cases of the entire metatarsal head through either a dorsal or a plantar incision. Often there is extensive scarring due to previous radiation or local excision of skin, and relief can be obtained only by radical excision of the underlying bone.

Hammertoe deformity may be of a rigid type in which the proximal joint of the toe cannot be manually straightened, and in this type either phalangectomy or arthrodesis of the joint is necessary for correction. However, many patients have a flexible type of deformity in which the joints can be extended if the whole toe is depressed downward, indicating that the joint is not fixed. This type of deformity responds very well to the transfer of the flexor longus tendon into the extensor tendon on the dorsal aspect of the toe, so that the downward pressure of the toe is accompanied by extension of the interphalangeal joints. This procedure may be performed on multiple toes of both feet at one operation. A similar procedure may be used to correct a flexible hammertoe deformity of the great toe. This method of tendon transfer requires cast immobilization for 2 to 3 weeks and is not often used in the elderly patient.

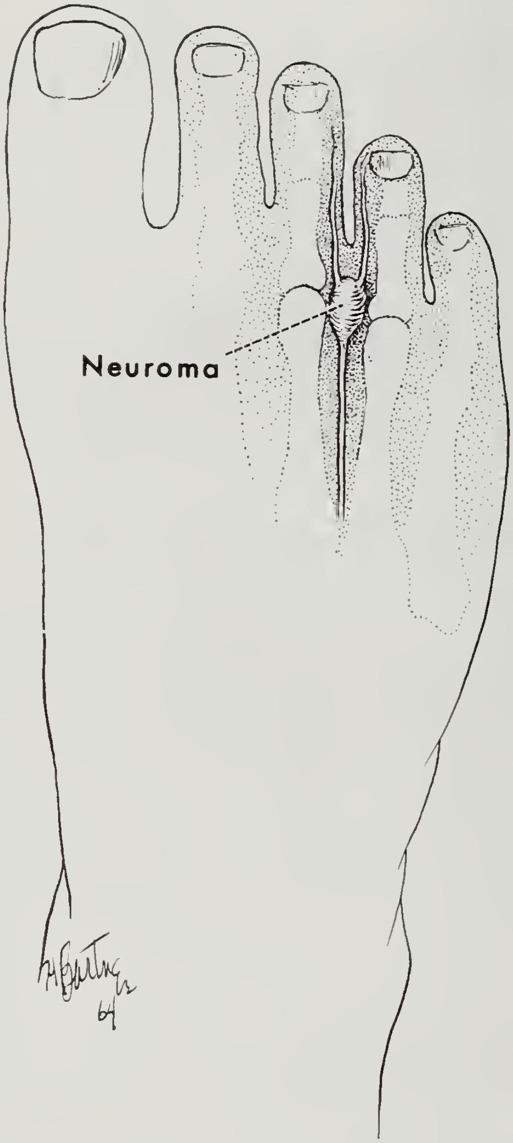

FIG. 2. Interdigital neuroma between the third and fourth metatarsals.

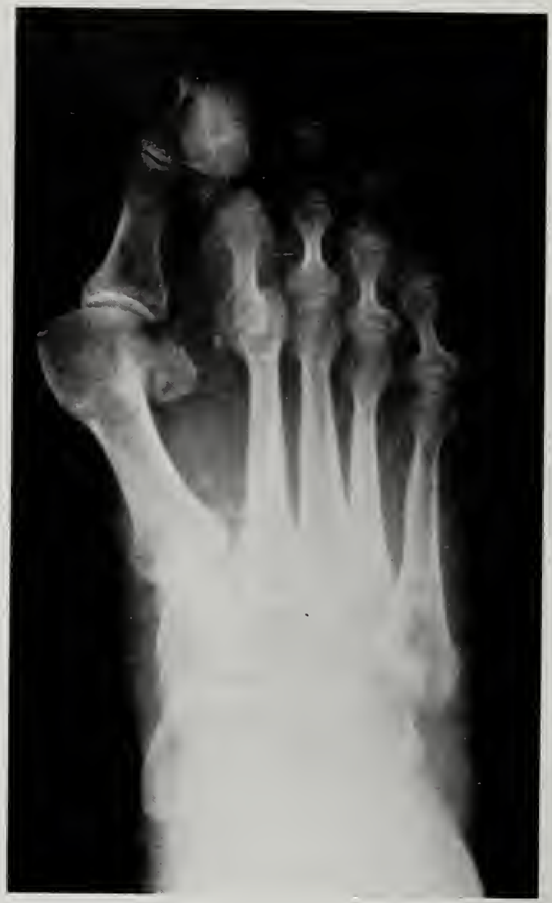

FIG. 3. Hallux valgus or bunion. Note dislocation of second metatarsophalangeal joint and overlapping of second toe.

Hallux valgus or bunion is characterized by medial prominence of the first metatarsal head and lateral deviation of the great toe (figure 3). It is often associated with medial deviation of the first metatarsal and a wide space between the first and second metatarsals, referred to as metatarsus primus varus. This medial deviation of the first metatarsal leads to compensatory lateral deviation of the great toe due, in part at least, to footwear which approximates the toes. If this deformity is severe in a young individual, corrective osteotomy of the first metatarsal in order to narrow the foot is warranted. Radical bunionectomy in this age group often results in recurrence, and the outcome may be disappointing. Another method which is used to narrow the forefoot is a transverse sling procedure, described by Joplin,[1] utilizing an extensor tendon of the toes across the metatarsal area. In the middle-age group simple bunionectomy may be preferred, the medial portion of the metatarsal head being excised, care being taken to preserve the underlying abductor tendon. Beyond middle age or when extensive arthritis is present in the younger group, a radical bunionectomy is preferred, the medial portion of the metatarsal head being excised along with the proximal ½ inch of the proximal phalanx. If the extensor longus tendon is greatly contracted, a Z-lengthening of this tendon is indicated. Hallux rigidus is ankylosis, usually incomplete, of the first metatarsophalangeal joint which results in pain on attempting to push off with a normal gait since extension of the toe is limited. Joint resection is indicated as in radical bunionectomy. Since this type of joint tends to become stiff postoperatively, fixed traction in a cast or distraction with an intramedullary Kirschner wire for a period of 2 weeks helps maintain length of the toe and promotes early mobility.

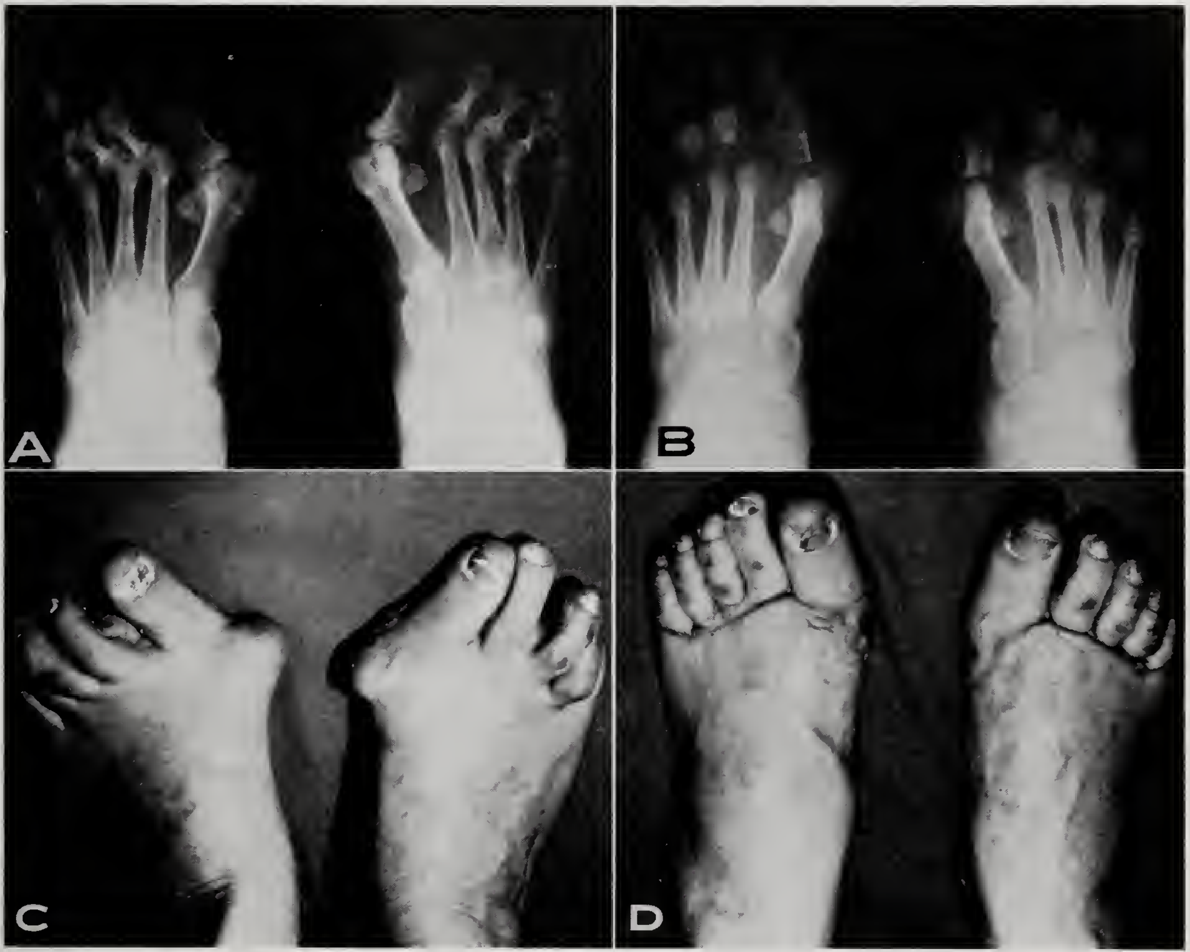

Fig. 4. (A) Rheumatoid arthritis with severe hallux valgus and dislocation of multiple toes. (B) Post operative appearance after radical bunionectomy and complete excision of the proximal phalanx (phalangectomy) and partial resection of the metatarsal head (condylectomy) of toes and metatarsals 2, 3, 4, 5. (C) Appearance of same feet before surgery. (D) Appearance after surgery.

Arthritis causes the most severe forefoot deformities, especially rheumatoid arthritis. In advanced cases it is not uncommon to find a severe bunion with a large bursa overlying the metatarsal head, dislocation of multiple toes associated with corns and hammertoe deformity, and depression of the metatarsal head due to the dorsal position of the dislocated proximal phalanx (figure 4-A). Surgery in this type of case must be radical, and the necessary procedures can be performed through a single transverse incision across the entire dorsum of the foot at the metatarsophalangeal level. The operation may consist of a radical bunionectomy, excision of the proximal phalanx of toes 2, 3, 4 and 5, and condylectomy or resection of the metatarsal heads of several of the metatarsal bones (figure 4-B). Interdigital neuroma may also be removed through the same incision. The relief of pain and improved appearance are often dramatic in the very severely deformed arthritic foot (figures 4-C and 4-D).

Surgery on the foot is not performed for cosmetic reasons but for relief of pain which persists in spite of conservative measures and proper footwear. Postoperatively the patient may bear weight very early, and even in the radical procedures described above, some weight-bearing is tolerated in 2 or 3 days. Moderate postopera-

(*Continued on page 156*)

A Twenty-three Year Statistical Review of the Department of Surgery at Doctors Hospital

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Within the plan of the Department of Surgery at Doctors Hospital and upon request for a Doctors Hospital issue from the Editorial Board of the Medical Annals of the District of Columbia, this 23-year statistical study of the activities in surgery has been prepared.

Statistics are used in an attempt to prove something or at least to establish the truth of data derived from observations. In some medical groups it is customary to disregard all data whose validity has not been evaluated by statistical methods. Yet, medical statistics prove little. They may be used to transform a possibility into a probability, but the cautious reader will consider the results of statistical studies with skepticism. On the other hand, they do serve a practical purpose in hospital practice. For example, they direct the staff toward use and procurement of autopsies. They also define the infection trends and backstop the Committee on Infections.

The Doctors Hospital is a highly specialized unit of 307 beds. It has no outpatient department and thus the number of traumatic procedures is very small. It does not admit patients with known infectious diseases, such as meningitis and tuberculosis, for the hospital authorities have felt that these cases are best cared for where the facilities are more nearly complete. It discontinued the obstetrical service on May 31, 1962 after 36,282 mothers had been delivered. There were 11 maternal deaths with a mortality of 0.03 per cent and an autopsy rating of 81.1 per cent. Although there is no separate unit of pediatrics, 6,235 children have been admitted, with 13 deaths and an autopsy rate of 86.1 per cent. Most of these children were admitted in the early '40s, 720 of them (the largest number in 1944).

The hospital has 5 Departments: Surgery, Medicine, Anesthesiology, Radiology, and Pathology. Figure 1 shows the various Divisions in the Department of Surgery.

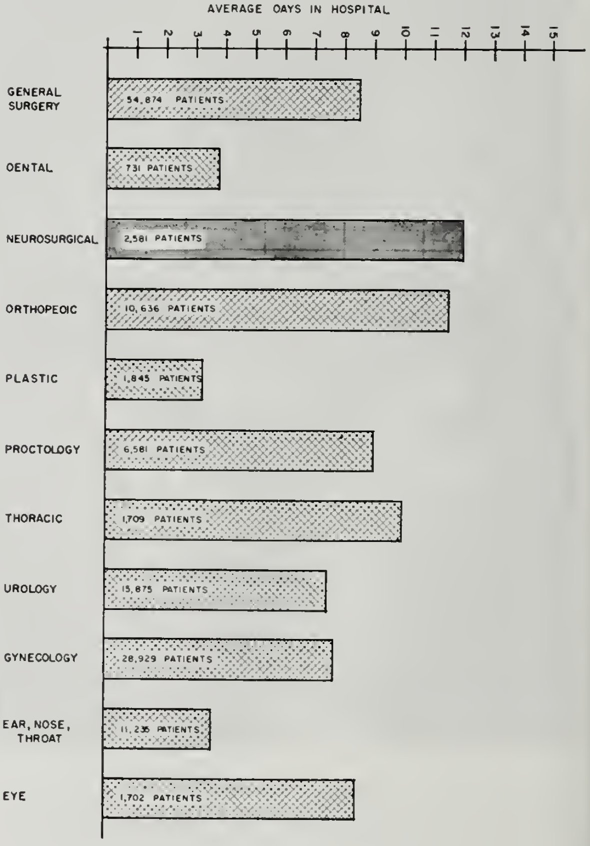

FIG. 1. Number of patients admitted to each Division of the Department of Surgery (1940–1963) and average length of hospital stay. Neurosurgery figures apply from 1953.

The Doctors Hospital was opened in 1940, and all the figures apply to the period from March 1940 to March 1963 inclusive. The Department of Surgery has had 3 Chiefs: (1) Dr. Charles Stanley White, Sr., (2) the late Dr. Charles Stanley White, Jr., and (3) Dr. Harry Lee Claud, who is the current Chief of Surgery. There were 136,698 admissions, including 16,855 inpatients and outpatients, with a total of 154,292 operations. There were 1,541 deaths, representing an operative mortality of 1 per cent. During this time the Department of Anesthesia administered 127,496 general, 8,281 regional, and 23,612 local anesthetics. There has been no attempt to separate the patients who died of a primary anesthetic cause from deaths by other causes. They are listed in the inclusive figure under the division of the Department of Surgery in which the death occurred. Thus, for 910 patients who died in the Department of General Surgery, out of 57,174 operative procedures the mortality rate is 1.5 per cent. One can quickly scan table 1 and see how the mortality varies from service to service (0 to 2.7 per cent).

TABLE 1: Statistical Data in the Department of Surgery

	Number of Patients	Operations	Deaths	Operative Mortality (per cent)	Autopsies (per cent)
General Surgery	54,874	57,174	910	1.5	70.2
Dentistry	731	1,229	1	0.08	0
Neurosurgery (1954–64 only)	2,581	3,457	80	2.3	81.2
Orthopedics	10,636	13,277	113	0.8	53.1
Plastic Surgery	1,845	2,833	0	0	—
Proctology	6,581	9,966	51	0.5	60.8
Thoracic Surgery	1,709	2,533	68	2.7	72.1
Urology	15,875	16,770	212	1.3	67.0
Gynecology	28,929	27,520	100	0.4	62.0
Ear, Nose and Throat	11,235	13,728	5	0.04	60.0
Ophthalmology	1,702	3,318	2	0.06	50.0

From 1940 through 1957 there were 16 deaths in the operating room and recovery room from all causes. During this time there were 90,795 cases in surgery and 25,856 in obstetrics. Cardiac arrest was noted in 5 cases in 109,000 anesthesias in 17 years.

The average number of days spent by a patient in the hospital is becoming an increasing concern to doctors and hospitals alike. In a busy hospital of Doctors' size, where the average occupancy rate for the past 23 years and 11 months has been 83.8 per cent, it is noteworthy that the average length of stay in the various Divisions of the Department of Surgery has varied from 3.2 to 11.9 days, or an average of 7.5 days. This compares favorably with the Middle Atlantic regional average of non-Federal hospitals of 7.8 days. The longest average stay is in the Neurosurgical Division, but this represents a relatively small number of patients in the total amount. (Prior to 1953 the Division of Neurosurgery was listed with General Surgery.) At no time in the history of the Doctors Hospital has there been a committee for review of patients continuing beyond what would be considered adequate hospital stay. It has been the consensus of the Administration that this factor is effectively controlled by the excessive demand for admissions to the hospital from all Divisions of Surgery and the Department of Medicine. The 23-year, 11-month average occupancy of the hospital has been 83.8 per cent. This compares most favorably with the 10-year occupancy figure of 66 per cent, the national average of proprietary hospitals.

The Division of Neurosurgery enjoys a higher autopsy rating than any of the Divisions (81.2 per cent) (figure 2). Its statistics cover the years 1954 to 1964, since prior to this time they were not separate but were listed in the Department of General Surgery.

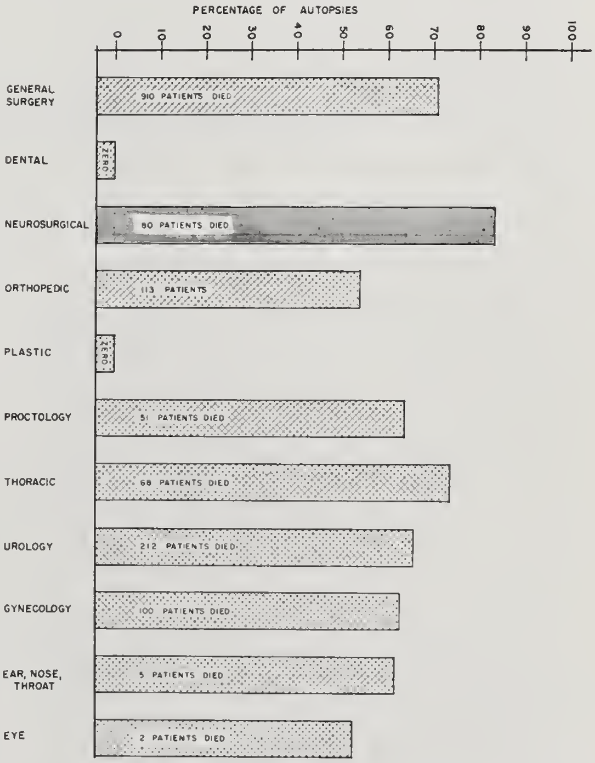

FIG. 2. Mortality of each Division in Department of Surgery (1940–1963) with percentage of autopsies performed.

Procuring autopsies is almost entirely the responsibility of the surgical staff and recently contributed to the accreditation of the Hospital. The Joint Commission on Accreditation of Hospitals has this to say about autopsies:

"The Commissioners of the Joint Commission on Accreditation of Hospitals for some time have been concerned both with poor attendance at hospital autopsies and greater utilization of autopsy findings. Each individual hospital should concern itself with these problems and its own ability to improve them. The Commissioners have the following suggestions to make:

(a) Keeping attendance records at autopsies, with special emphasis placed on the presence of the attending physician on the case. (Surveyors are requested to check this.)

(b) Review of the autopsy findings by the attending physician with the prosecutor if the attending physician is unable to be present at the autopsy.

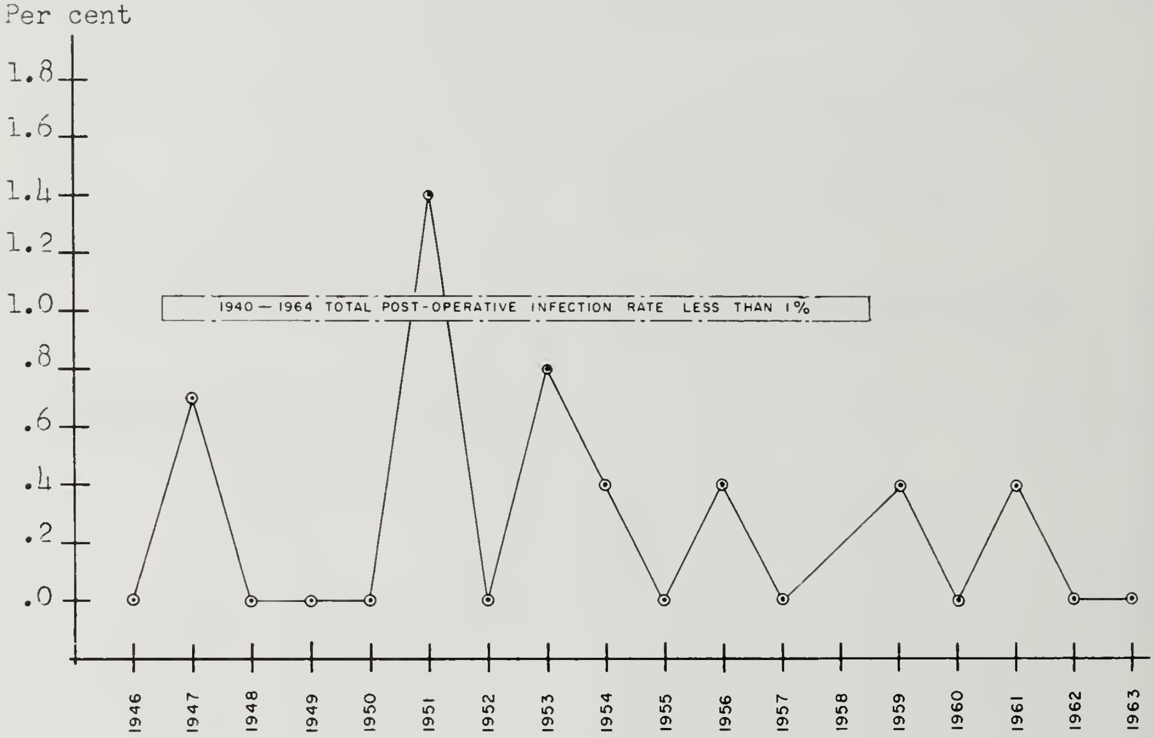

Fig. 3. Infection rate in 3,554 direct and indirect inguinal hernia operations.

(c) The possibility of a pertinent paragraph or two being written in the chart discharge summary, describing the highlights of the findings at autopsy.

(d) Development by the hospital of the mechanics of getting staff physicians to attend autopsies.

"The percentages of autopsies performed and their utilization as a teaching medium are a very important factor in the accreditation of a hospital, and of necessity are closely allied to the pathology department. The actual procurement of permission for autopsies is largely a function and responsibility of the medical staff. An autopsy should be performed by a pathologist, but where this is not possible the next best person is a physician versed in autopsy procedure and protocol. Every good hospital should have its own morgue if physically possible. The number of hospitals without morgues is quite high and the number not doing autopsies is considerable. Autopsies as a means of staff education and improvement of clinical knowledge rank extremely high in the minds of the Commissioners of the Joint Commission. As a rule of thumb, the Commissioners believe that nonteaching hospitals should have at least a 20 per cent autopsy rate and teaching hospitals at least 25 per cent. Many good physicians feel this rate is too low and every effort should be made to exceed it. . . ."

The Department of Surgery is proud of its autopsy rate of 68.4 per cent for the first 23 years of the Hospital's occupancy. In the Department of Surgery 1,541 deaths occurred in 23 years; this is just slightly more than 1 death per week. In the past 10 years during which the Division of Neurosurgery separated from the Department of General Surgery the autopsy rate has been 81.2 per cent. This figure represents the highest of all subdivisions in the Department of Surgery.

The Division of General Surgery admitted

(*Continued on page 156*)

The Interlocking of Twin's Heads at Term

Report of a Case

JAMES ROGER COSTELLO, M.D., F.A.C.S.
Consultant in Gynecology, Doctors Hospital, Washington

THE MOST frequently-quoted incidence of interlocking and compaction of twins is 1 out of 90,000 deliveries, or 1 out of 1,000 twin gestations. These figures are based on a series of 90,000 deliveries by Von Braun, in which 1 such case occurred. Some think that this figure is low, but because of its extreme rarity and differences in definition an accurate incidence is difficult to determine.

The World Almanac 1963 reports for the years 1958 through 1961, inclusive, approximately 17,000,000 births in the United States. According to the Von Braun series of 90,000 deliveries, in which 1 case occurred, there would be 188 cases in the United States alone during this 4-year period.

"Locked twins" is a rather ambiguous term. Falke[1] in 1939 expressed the opinion that the only true locking was represented by a situation in which 1 fetus was in the pelvis and locked with some part of a fetus not in the pelvis. An example would be a breech with its chin "locked" over the neck and shoulder of a transverse lie. Naturally, Falke's case was the only one like this reported up to that time. In an attempt to clarify the situation and set forth some standard definition, Nissen[2] in the year 1958 divided the types of twin entanglement into the following 4 categories:

1. Collision: The contact of any fetal parts of 1 twin with those of its co-twin, thereby preventing engagement of either.
2. Impaction: The impaction of any fetal parts of 1 twin onto the surface of its co-twin, thereby permitting partial engagement of both simultaneously.
3. Compaction: The simultaneous full engagement of the leading fetal poles of both twins, thus filling the true pelvic cavity and preventing further descent or disengagement of either.
4. Interlocking: The intimate adhesion of the inferior surface of a twin's chin with that of its co-twin above or below the pelvic inlet.

Two-thirds of the cases reported by Nissen were of the breech-vertex variety with twin A the breech, but only 9 out of 70, or approximately 13 per cent, were of the chin-to-chin type.

I have a strong conviction that the babies' receding chins, with their toothless mandibles and superior maxillae, would not provide a sufficient area of contact to interlock. This seems to be a case of interlocking heads.

Nissen, in a review of the literature in 1958, reported 70 cases, including 1 not previously published. The perinatal mortality rate in this series was 43 per cent (60), with 60 per cent of the first twins (42) lost. Spontaneous delivery is impossible except in the case of small babies.

Since Nissen's basic review in 1958 a search of the literature revealed 8 more cases. In 1959 Mahon[3] reported a case of dystocia from interlocking of heads during a twin delivery, and in 1960 3 more cases were reported in the same issue of the *British Medical Journal*.[4, 5] A case not reported by Nissen and 2 cases previously unpublished but described by Percival[6] in a British obstetric volume were also added. Carlson and Henry,[7] U.S.A.F., reported a case in 1961. This brings the total number of cases reported in the medical literature from 1882 to August of 1963 to 79 cases, including the case reported herein.

"Locked twins" is a rare but exceedingly serious complication of pregnancy. McCormick[8] stated that "the one situation that affords real dystocia rarely seen in the lifetime of the busy obstetrician is locked twins."

In this series of 79 cases the perinatal mortality rate was "68 infants, 48 being the first twin."

Report of Case

Mrs. G.W., aged 19, primigravida, was admitted to Columbia Hospital, Washington, D.C., at 1:00 a.m., August 4, 1963, with twin pregnancy.

She developed an anemia during the last trimester. Iron therapy was not tolerated and had to be discontinued. At the time of admission the hemoglobin was 7 Gm. The weight gain was 47 lbs. The patient is 5 ft. 4 in. in height and normally weighs 125 lbs. Some of the weight gain was due to edema of the lower extremities and of the hands and face. Diuril® therapy was of some benefit in controlling the edema and weight.

At the time of admission the patient was in moderate labor. The membranes ruptured spontaneously at 1:30 a.m. At 4:40 a.m. the patient was given 50 mg. of Demerol® and at 5:30 a.m. 50 mg. of Sparine®, both intramuscularly. At 6:00 a.m. a vaginal examination was made with the following findings: The cervix was fully dilated; the presenting part of the first baby, the breech, was not in the pelvic cavity; the cervix was in the pelvic cavity but not in contact with the presenting part (breech); a hard mass was felt above the pelvic brim on the right side, and this mass was movable. The diagnosis was interlocking heads. The X-ray report was twins near term; the heads may be interlocking.

The patient was placed in a supine position on the operating table and the abdomen prepared and draped. Under continuous lumbar epidural anesthesia (Carbocaine® 1 per cent) and nitrous oxide and oxygen the abdomen was opened by a midline incision from just below the umbilicus to several inches above the symphysis pubis. The peritoneum was opened and a dextrorotation of the uterus was corrected. A low cervical incision of the peritoneum was made from round ligament to round ligament in the vesicouterine peritoneal fold. The bladder was separated from the cervix. The uterus was entered with a classical midline incision and showed the babies' heads side by side. The opening of the uterus caused the heads to become more firmly fixed in place, thus diminishing the surgical opening in the uterus.

The uterine opening was not large enough to permit the passage of a baby's head. In order to deliver the heads the left hand (the operator is left-handed) was placed in the uterine cavity just behind the head of the vertex presentation (male, 6 lbs. 4 oz.) and by a short quick upward push the head was delivered at 11:28 a.m. The second baby's head, breech presentation (female, 6 lbs. 2 oz.) was delivered by the same technique at 11:29 a.m. The placentae and membranes were removed.

The deliveries of the heads caused a left lateral extension of the uterine incision. The uterine incision and the lateral extension were approximated and peritonealized. The vesicouterine peritoneal fold was attached to its former position. The abdomen was closed in layers.

Because of the low hemoglobin a transfusion of 1,000 c.c. of blood was started at 10:15 a.m. The surgery began at 11:21 a.m. and was completed at 11:55 a.m. (*Comment:* Because of the size of the babies, the low cervical incision was made to protect the bladder and to allow for an extension of the uterine incision.)

The patient made an uneventful recovery except for a mild case of cystitis and was discharged on the eighth day. The babies' progress was excellent and they were discharged with their mother.

Summary

The following should be helpful in diagnosing "locked twins":

1. Diagnosis of twins
2. Premature labor
3. Early rupture of membranes
4. Primigravida (72 per cent of the cases—58 out of 80 patients)
5. Lack of progress despite good contractions
6. Uterine inertia
7. Absence of presenting part in pelvic cavity despite 100 per cent dilatation of the cervix
8. A jammed pelvic cavity (more than 1 part).

The average locked twins weigh between 6½ and 9 lbs. In my case the locked twins weighed 12 lbs. 6 oz. and were 18½ inches in length. This is the largest set reported.

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PRESIDENT'S PAGE

THE MEDICAL SOCIETY'S POSITION ON "MEDICARE"

In the vast war of words over the Administration's bill to provide hospitalization insurance for the aged under Social Security, the air has been filled with clichés, denunciations, and frozen dogmas—so much, in fact, that some very real problems have been all but obscured. Many physicians are also confused in their understanding of the situation.

As Congress grapples with the issue again, evidently with an improved prospect that some type of legislation may be enacted this time, it is urgent that our leaders take a fresh, open-minded, nonpolitical, careful look at facts which have been too long submerged.

No one, of course, least of all the medical profession, is opposed to adequate medical care for the aged or for any individual or group. Adequate medical care for every individual has always been the traditional concern of physicians. It would be a cruel hoax to enact the proposed "Medicare" bill or the King-Anderson Bill on the somewhat blind assumption that this will solve the problem. In fact, the proposals would fall far short of their claims. Yet this is precisely what is now threatened, partly by design and partly because organized medicine has taken a stand for too little too late.

Following are some of the deficiencies in the Administration's bill which have received far too little attention in the public discussion:

1. It will not achieve what has been advertised. The bill would give protection against only a *portion* of medical costs. It covers, for a small initial payment, 60 days of hospitalization, 240 days of home visiting-nurse care, a portion of outpatient hospital diagnostic services, and 60 days of nursing-home care *only after* hospitalization. It does not provide for the bulk of expenses actually incurred by the aged for long-term nursing-home care, for physicians' care, surgery or drugs, nor does it provide recompense for those elderly who are best treated and cared for in their own home environment. In order to receive benefits, one must go to a hospital.

2. When the public comes to understand that the bill provides very little to help a large number of the aged, the disillusionment will be severe. Pressures to extend coverage will be almost politically irresistible, as every country with some type of socialized medicine has experienced. Yet expansion to cover many of these other medical services could double and triple the already enormous total cost of the program. As physicians we are primarily concerned with the quality of medical care. Yet we as citizens know there are no deductions or exemptions from the Social Security tax. The $5,000 a year worker would pay the same as a $100,000 a year executive. Millions of citizens would be paying more for Social Security than for all the other services of Government combined. It has been estimated that the average worker will be paying more toward Social Security in 1969 than toward the general tax revenue *without* so-called "Medicare."

3. Since the proposed bill provides for certain hospital services, whatever they cost, the actual payments are difficult to estimate. The cost of hospitalization has been increasing at a rate of 6.7 per cent every year for 10 years. The cost must necessarily escalate tremendously when the elderly, who can only receive benefits when hospitalized, crowd our institutions. Since the bill would incorporate the hospital program into the regular Social Security System, the increasing

but inestimable costs could threaten the solvency of the regular program for pensioners and widows. This is true even though we are assured the hospital insurance trust fund will be separate. It will still be administered by Social Security.

4. The Government would be paying hospital bills directly to hospitals, a process which inevitably leads to administrative control. The next step may be direct payment to the physician rendering a service, with similar controls by Federal Agencies. The Kerr-Mills Act tends to eliminate such Federal Agency controls by leaving administration to the individual states. The use of prepayment and insurance programs would practically eliminate Government administrative controls.

5. Since service benefits are only available to a hospitalized patient or limited to some O.P.D. care, this will create a tremendous problem to our hospitals already burdened with nonessential hospital cases.

These deficiencies are real, and important, but they are not insolvable. One basic fault is that the bill covers *all* the aged population—those who can provide amply for themselves as well as those who really need help, and this blanket approach pushes the ultimate cost to unmanageable proportions. However, this is the basic philosophy of Social Security. A far more effective and less expensive approach would be to provide greater protection for the smaller number *who actually need help*. The Kerr-Mills Bill (M.A.A.) is not the complete answer to our problem. When properly implemented it can certainly aid the aged persons for whom it was intended with simplified determination of need, medical and financial. The lack of uniformity in how M.A.A. is administered by various states is a great deterrent to its appeal or success nationally.

To avoid a threat to the pension and survivors' program the medical care program should be made completely separate from the regular Social Security System, administratively and otherwise. As a basis for estimating medical costs, the program could provide fixed prepayment for individuals, scaled according to their income level and medical needs. To forestall governmental interference with the private practice of medicine the program could offer recipients a choice of acceptable prepayment or insurance programs, thus providing considerable freedom of choice to suit individual needs. Private insurance has had considerable experience in administering all areas of health care and is becoming more successful each year.

We would not be so foolish as to insist that these suggestions provide the only or the absolute answers. But it is abundantly clear that the Administration, members of Congress, and medical leaders should forego the sterile debate and frozen positions of the past and take a flexible, creative, scholarly, and far-seeing approach to this problem.

The Medical Society of the District of Columbia, before the AMA House of Delegates in November 1964, stated its position in the following resolution:

"*Resolved*, That the American Medical Association does now request the Congress of the United States to develop forthwith a realistic Senior Citizens Health Care Program, for those persons 65 years of age and over, in coöperation with the American Medical Association, Blue Shield and Blue Cross, the Commercial Insurance Industry, and Clinics or Group Practice Plans, with said program to be patterned on the successful Federal Employees Health Benefits Program now in existence."

Furthermore, on February 2, 1965, the Executive Board and the Committee on Aging released their recommendations for improving M.A.A. (Kerr-Mills) in the District of Columbia with the hope of making it a model plan for other areas.

Paul R. Wilner

Charles Stanley White—An Appreciation

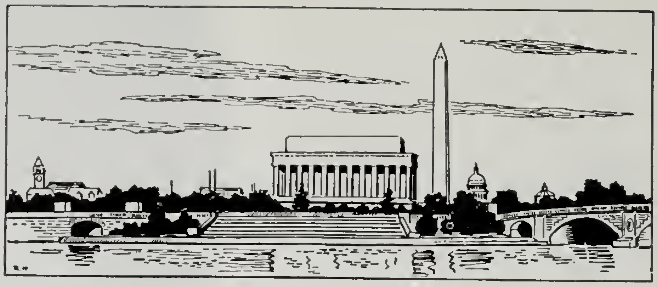
Born, raised, and educated in Washington, Dr. White received his degree from George Washington University (then Columbian) School of Medicine in 1898. His major activity for all the years of the 20th century has been the practice of medicine and surgery in this City. But his total contribution has been far-ranging indeed, touching the day-by-day activities of colleagues, patients, and the whole community. The teaching of surgery at his Alma Mater for a half century was summated by his major role in establishing and nurturing the Eye Street Medical Center now concentrated around Doctors Hospital. Four decades of this interest have just seen him participate as principal speaker at the ground breaking for still another medical office building in the Center, the Washington Medical Science Building.

In his book entitled "Surgical Interludes" Dr. White quoted Walt Mason on ambition: "When I was young I used to dream of scaling all the heights of fame. I had visions fair of gold and princely gems of east and west: for then my heart was young and bold."

Pertinent also are the words of General MacArthur: "Whether you are 70 or 18, there is in the heart of every human being the unfailing childlike appetite for what comes next. You are as young as your faith and as old as your doubt, as young as your self-confidence and as old as your fear, as young as your hope and as old as your despair." Our Dr. White has his faith, his self-confidence, and his hope. He is young to us all. We salute him for so much that he has done so well and for so long, and, more amazingly, for what he is still doing.

We dedicate this issue of the Annals to him.

THE STAFF OF DOCTORS HOSPITAL



EDITORIALS

The Doctors Hospital

Hospitals, or temples as they were called before the Christian Era, have always been accepted as a dominant factor in the progress of every prosperous nation. Yet the public at large regards the hospital only as a place for the treatment of the ill. One only has to visualize the catastrophic human mortality if a strike were visited upon all hospitals. The physical construction and the scientific operation of them have been phenomenal in the past century, of which we should be proud.

The Doctors Hospital was proposed by a group of physicians who wished to build an institution where they could pursue their practice under modern surroundings and operate it with rules and regulations of their own. Several problems naturally arose such as securing the funds required and choosing an available and desirable site. Of greatest concern was the question, Was it necessary and would it be successful? It was a bold undertaking.

The finances were obtained by subscription from the group, which had grown in membership, and from loans obtained from local banks. No funds were solicited as gifts and none were obtained from Federal or municipal sources.

The location was made to order, between 2 medical office buildings on Eye Street between 18th and 19th Streets. Eye Street was an attractive residential area, easily accessible by 2 streetcar lines (both of which have been recently abandoned). The mayor of Washington and Colonel Myer (for whom Fort Myer was named) once lived on Eye Street. The Friends Meeting House, built in 1811, occupied the middle of the block on the north side of Eye. This was later replaced by the Friends (Sidwell) School. This was the site selected for the construction of the Hospital, but the purchase of the property in question was delayed 6 months because of the time consumed in perfecting the title and searching for records, which went back many years and which were buried in the files in Alexandria and Fairfax. The price paid for the property was a wonderful bargain, compared with modern quotations.

Construction of Doctors Hospital began in 1938, and the Hospital opened March 7, 1940. Senator Robert A. Taft participated in the ceremonies which attended the laying of the cornerstone. Part of his remarks on that occasion bear repeating since they are as pertinent and appropriate today as when they were uttered 25 years ago. He said: "We should be, above all, concerned that every patient retain the right to select his own physician, so that the personal relationship may not be disturbed and the success of the individual may depend on his real ability instead of his political connections. We should be concerned that no great proportion of the doctors become employed by the Government. I see no reason why the present condition of the individual service should not be preserved even though we adopt the principle of Federal financial aid. The construction of the Doctors Hospital here in Washington shows that a large part of our problem may be met without the pouring out of more millions of dollars from the Federal Treasury, and without turning over to some state or Federal official the entire determination of who shall receive hospitalization and when he shall receive it."

The Doctors Hospital is not a university institution and differs in many ways from the latter. It was established to afford a place where well-qualified physicians can treat their patients under the best facilities and in a wholesome environment. It is open to physicians whose qualifications meet the standards we have set. We reserve the right to reject any who do not meet them. The Hospital provides residencies in internal medicine, roentgenology, and pathology and conducts clinics in surgery and its branches by outstanding members of the profession.

Let us hope nothing will occur to disturb, in the near or distant future, the excellent progress and character of the American hospitals.

Charles Stanley White, M.D.

From the Files

the record of a man of vision—Charles Stanley White

MEMBERSHIP FILES in an organization as venerable as the Medical Society of the District of Columbia all too often gather only dust, but occasionally there is a file which reveals the record of an extraordinary man. Such is the file on Dr. White. Most of what follows are excerpts only from letters, documents, news clippings, and the like; in chronological order they reveal a multifaceted man who never believed that status quo was so good that it could not be improved upon.

September 17, 1927

Receipted payment to Dr. White, debtor, for $3.02 to cover stencils, mimeograph ink, and paper used for President's Questionnaire to the membership, seeking their opinions on the operation of the Medical Society. (The results were incorporated in his Presidential Address in December of that year together with his own comments.)

December 21, 1927

From Presidential Address by Dr. Charles Stanley White

V—Do You Think a Monthly or Annual Clinic, to Which Physicians in Maryland and Virginia Would Be Invited, Practicable?

Eighty-five per cent who answered this question were in favor of an annual clinic. There was some doubt expressed as to the ability to put it over. The meeting of the A.M.A. last May demonstrated to my satisfaction that the committees that handled that meeting could make it a success, and a day of clinic, with demonstrations, movies, lantern slides, specimens, would be no gigantic task. It would be a simple one. I should like to see the experiment tried, and my conception of that day would be something like this: The time would be the last week in May. In the morning, clinics, medical, surgical, and laboratory, would be conducted at the several hospitals. At this building, lantern slides, movies, demonstrations of specimens, and exhibits should be held. The recess could well be devoted to group luncheons to which we could invite physicians from out of the city, colleagues and professional friends, and make it an occasion for a social reunion. The afternoon should be devoted to scientific papers in this building and the evening to election of officers for the ensuing year. It may seem a radical step to suggest the election of officers in May. To me it seems illogical to elect them in December. Just why we should reorganize the entire Society in the middle of its sessions by elections has never been clear to me. New officers take charge January 1 and are expected to function within 7 days. It cannot be done unless the same committees are retained and this is undesirable. Think of the problem of the Program Committee: How can a careful selection of papers be made without a number from which to choose? Voluntary papers follow, and usually are disappointing.

The election of officers in May leaves time for careful scrutiny of the membership for committee work. It allows time, before October, for a good organization to run with maximum efficiency and minimum friction. Then, too, a May election may bring out a larger vote, as the various pledged members will not be kept indoors by December's icy blasts.

A Presidential Salute!

THE MEDICAL SOCIETY of the District of Columbia is proud of its distinguished member, Dr. Charles Stanley White, our sixtieth President. His medical and civic accomplishments have already been indelibly etched upon our history. I admire him not only as a great pioneer surgeon who has bridged many gaps in the techniques of surgery but more as a warm doctor, always compassionate and available to his patients, all of whom were his friends.

PAUL R. WILNER, M.D.
President, The Medical Society of the District of Columbia

VII—Would You Approve of a Plan to Allow All Business of the Society, Except Election of Officers, Be Handled Through an Executive Committee, Elected by the Society?

More power to the Executive Committee, within certain limits, would seem desirable. There is a well founded complaint against the introduction of business on the floor. We should remember that this Society is essentially and fundamentally a scientific body, and the business should be strictly incidental.

If the Executive Committee could handle all affairs, except those that involve public policy, amendments to the constitution and bylaws, and election of officers, it would delete much unnecessary vocalization on the floor of this building. It does not seem necessary that this body should debate the question of raising the salary of an employee $5.00 or $10.00 per month, or consume its time with the question of making repairs to the building. Very few come to hear such discussions as they have many similar problems at home. The high type of men who have composed the Executive Committee for years have been such that the Society should feel safe in granting this committee additional powers. As a member of the Executive Committee, I intentionally omitted the consideration of myself in making this high appraisal, but it stands for all the rest.

VIII—Would You Approve of a By-law That Provides That All Nominations for Office Be Made at Least One Month Prior to the Annual Meeting?

Ninety per cent of the membership voting are in favor of it and 90 per cent are not usually wrong. It should be incorporated in our bylaws. In fact, we should consider the advisability of having a nominating committee, with the privilege of nominations from the floor by individual members, four weeks in advance of the annual meeting. The present system invites a situation which could disturb the wholesome relations which now exist between members of this Society. The change may deprive us of an intensive and thrilling campaign, but we should manage somehow to get our excitement elsewhere.

Meetings to which the public are invited: This Society occupies an unique place in this city, in that while its membership includes practically every physician of the regular school, it takes little or no part in the civic life. It does not furnish information to its citizens on topics medical nor is it consulted in an advisory capacity regarding medical legislation, sanitation, or in any other way. We have an organization which stands for the best in medicine, yet vital questions, such as the regulation of the practice of medicine, is turned over to a citizens' advisory committee for a recommendation and the recommendation which followed in one instance was not good enough to be called asinine.

We, ourselves, are in a measure to blame. Ask the man on the street what he knows of the Medical Society of the District of Columbia and he will tell you that he never heard of it, but he does know of the Board of Trade, the Chamber of Commerce, the Rotary Club, the Kiwanis, and so on.

We have not been in contact with the public, but instead there has been a spirit of aloofness which ill becomes this age. If we expect the public to discriminate between chiropractors, charlatans, and intelligent physicians, we should at least give them the necessary information by which they may judge. The various cults and makers of spurious remedies have flourished and prospered as parasites on the public. Our most effective weapon against such common enemies is not by vitriolic attacks on the floor of this house, or elsewhere, but by education. We can accomplish this easily and effectively by conducting meetings in this hall where selected members of this Society would speak in a language that any one could understand upon simple topics of medical interest. Our attitude toward the public should be one of dignified friendliness, and much could be done in such public meetings to engender this feeling. It should, in reality, be expressed as a duty to the public which we should fulfill. To no small degree we can mold public opinion by proper publicity, and secure the good will and support of our citizenry in matters medical. The value of this is inestimable. It is my earnest wish that some specific action will be taken by this Society along these lines.

The daily press could be utilized by publication of some articles of timely interest, issued under authority of the committee on public information. They would offset and probably soon eliminate the syndicated misinformation the papers usually carry.

Broadcasting by radio is a means of reaching the public that has great possibilities, but must be used discreetly.

There is but one more thought I wish to present, and though it may seem depressing, it should not be omitted. The Grim Reaper must take his toll from our members, as elsewhere, and we should be prepared. In that preparation some bequest should be made to this Society to carry on. I would not suggest a fund for liquidating the debt, but for even a more worthy purpose. I can think of two separate objects:

First—A fund for defraying the expense of publication of the transactions of this Society, either as a monthly journal or an annual volume. I cannot think of a better way of perpetuating the memory of our members.

Secondly—The interest from another fund, and rather a small one would suffice, should be available to furnish hospitalization, nursing, medicine, and the necessities of life, for those members who may not have financial resources to give them the care they deserve. You may say that such an occasion will never arise; I will say that it has already arisen.

It would not be a strenuous task to get two such funds started. Every member should have his will made, and add to it a bequest to this Society. You will never miss it.

October 19, 1949

Text of Certificate Presented to Dr. White at the 20th Annual Scientific Assembly of the Society

"This certificate is presented to Charles Stanley White, M.D. in grateful acknowledgment of his outstanding contributions to medicine. One of the country's leading surgeons, he has distinguished himself in the field of medical education. He conceived the Annual Scientific Assembly of this Society. By example and precept he has had a profound influence for good on medical practice in the District of Columbia."

Dr. White's Acknowledgment: When one is the recipient of such an honor, it seems an appropriate occasion to ask himself, not if he deserves the honor, but if he alone is responsible for the accomplishments cited in the award. It is my opinion that every career is modified by heredity and environment. I was fortunate in having intelligent parents, not of my own choice, however. Any habits, traits of character, or philosophy of life with which I was endowed were due entirely to chromosomes in which I had no voice.

The medical school I attended had a faculty which was an inspiration to every student. I recall J. Ford Thompson, W. W. Johnston, A. F. A. King, E. A. de Schweinitz, D. W. Prentiss, D. K. Shute, W. P. Carr, Walter Reed, James Carroll, and John B. Nichols, among others who constituted that teaching staff. To some of our younger members, these may appear as fictitious or mythological persons, but I assure you that in their time and generation they stood apart in any group of medical men. During my internship and early days of practice, I had the advice and example of George Tully Vaughan, James Kerr, Swan Burnett, Charles W. Richardson, S. S. Adams, George N. Acker, Henry D. Fry, John Moran, I. S. Stone, J. Wesley Bovee and many other members of the faculty. The transactions of the Medical Society is replete with their names.

For over 40 years I have been a member of the Medical Society, serving as an officer and as a member of many committees; I have attended meetings frequently, and paid my dues. Through these duties and a fairly active practice I have had many contacts with members of our organization. I have found them as a group alert, progressive, coöperative, cordial, and honorable. I have cherished this environment, finding it pleasant, stimulating, and sometimes thrilling. And, last, but by no means least, I have had the invaluable assistance of my devoted wife.

Medical Annals, March, 1950

From "Our Living Past Presidents" by Arthur C. Christie, M.D.

Dr. White, in the late nineteen thirties, had reached the zenith of an unusually successful career. As a practicing surgeon he had attained a success far beyond that granted to most men; as a teacher he had reached the post of professor and head of the department of surgery in his alma mater; and as a contributor to medical literature and leader in medical organization he occupied a place of national importance. With such attainments most men would rest content. At that time, however, Dr. White became the leader in a project fraught with great responsibility and with many attendant risks. He demonstrated that the spirit of the pioneer is not a matter of age but an inherent quality of personality. The conception and construction of the Doctors Hospital and the group of medical buildings surrounding it was a real pioneering venture. After more than 10 years and in spite of the construction of 2 other large modern hospitals in this city, Doctors Hospital is constantly filled to capacity, and has adequately demonstrated its financial stability; these facts are sufficient proof of the need of such an institution and of the soundness of the vision and planning which made it possible.

February 17, 1951

Text of Citation from the George Washington University Medical Society Presented to Dr. White at Its 25th Annual Banquet and Alumni Reunion

"Graduate of The George Washington University: since the year 1900 ably serving the School of Medicine in various capacities; as professor of surgery he heads that department: contributor to professional literature: justly acknowledged a gifted surgeon: esteemed by students and colleagues: recognized for constant, many-sided and generous service in citizenship."

June, 1951

From the *Medical Service Bulletin*

At the June meeting of the Board of Trustees, Dr. Charles Stanley White, President of Doctors Hospital and Past President of the Medical Society of the District of Columbia, assumed the office of President of Medical Service, succeeding Dr. Frank D. Costenbader.

Dr. White, a pioneer in the voluntary prepayment movement in Washington, D. C.—he was one of the original incorporators of Group Hospitalization, Inc.—is Past President of the George Washington Medical Society; a founder member of the American College of Surgeons; a founder member of the American Board of Surgery; a Trustee of George Washington University and a Director of Riggs National Bank. He was elected to the Board of Trustees of Medical Service in January, 1950.

The Evening Star, July 1, 1954

From Feature Article by George Kennedy

Dr. Charles Stanley White, Washington's senior surgeon, is 77 years old today. He has been operating here for more than 50 years.

The other day he performed seven operations of abdominal surgery. That crowded his schedule. He did not get through until 2:30 p.m., just in time to begin his office hours.

He is the principal developer of intra-arterial transfusions which are saving many lives when the massive hemorrhages sometimes incidental to duodenal ulcers and to childbirth have reduced blood pressure and pulse to zero. . . .

When the Puerto Rican nationalists shot up Congress on March 1 and Representative Bentley of Michigan was taken to Casualty Hospital with a bullet hole in his abdomen, Dr. White was sent for. He had the Congressman on the operating table for almost 2 hours as he repaired the damage the bullet had done as it passed through the intestines.

It was a painstaking operation. The man's liver had been shattered and had to be packed together again.

Reporters were waiting in the lobby for Dr. White when he finally came down in the elevator.

"Was the operation successful?" one asked.

He answered, "If it wasn't I'd have gone out the back door."

Representative Bentley now is back on the floor making speeches.

Dr. White is a lifelong Washingtonian. He was born in a comfortable 2-story house at Eleventh and E Streets, S.W., one of 9 children—7 sons and 2 daughters.

His father, George W. White, operated a foundry in Southwest Washington and was President of the Belt Line Street Railroad. . . .

Little Charlie was a good student. His mother preserved his sixth-grade report card from Bradley School for March, 1890. It read: "Deportment, 100 per cent; scholarship, 99.9 per cent."

Southwest was "The Island" in those days, separated from the rest of the Capital by the canal. Charlie had a good time. He swam off the Stephenson coal dock (owned by an uncle) and played a pretty good game of ball. He had early decided to become a doctor.

He went right from high school into George Washington Medical School, which was possible in those days. His father died when he was halfway through and he had to get a job and go to school nights. He was graduated in 1898; finished his internships at GW and Columbia Hospitals in 1901. In 1903 he was appointed Resident Superintendent of the old Emergency Hospital at Fifteenth Street and Ohio Avenue (on part of the site of the Department of Commerce Building) and rode the ambulance for 5 years.

January 26, 1959

Dr. White Speaks at Dedication of the Charles W. Hyde Addition to Doctors Hospital

This occasion is unusual in at least one respect—a hospital has built an addition, has assumed a financial obligation, but is not asking for contributions or endowments. This hospital has never sought Federal or civic financial aid, nor has it ever participated in a campaign for funds.

It is my privilege to announce that this Hospital has been enlarged, and by the unanimous action of the Board of Directors it will be named the Charles W. Hyde Addition, in memory of one who was a co-founder and the treasurer for many years.

MEDICAL ANNALS, April, 1959

From "In and Out of Focus" by The Observer (Theodore Wiprud)

No Washington physician is better known to his fellows than Dr. White. His friends have tremendous respect and admiration for him. Those who see him frequently, marvel at his youthful appearance and physical stamina. With something akin to awe, they relate that his schedule would weary men half his age.

Perhaps Dr. White himself revealed the secret of his vigor when he told your Observer recently that the practice of surgery had always been and still was to him "a great adventure." What makes him especially unique to your Observer are his adaptability to changing times and his deep interest in the future. For one who has been in the practice of medicine for more than half a century, these qualities are priceless, for they make for a rich and fruitful existence.

The Star Magazine, Sunday, March 25, 1962

From "Doctor of the Year" by Myra MacPherson

Dr. Charles Stanley White's office is a good place to go, even if you're only suffering from a rainy day, for in this office there is something very rare; and that is Dr. White.

Dr. White has noticed a change in his patients through the years: more and more need treatment for nervous tension. "It is a fact there are more things to worry about, world tension, the cold war insecurities," he observed. "Someone said more people are killed by worry than work. Of course," he added with philosophic candor, "more people worry than work."

This is definitely not the case with Dr. White. He is in his office at 8 a.m., does not leave until 5:30 p.m., goes in on Sundays to catch up on medical journal reading. He regards operating as a "hobby"; says he "doesn't know what I'd do without my work," and thinks "one sure way to die young is retire too early."

Another hobby is planting. . . .

Dr. and Mrs. White have a beautiful garden at their home, 2301 Kalorama Road, N.W. They

DR. WHITE in 1902, at the beginning of his career as a surgeon.

have 2 children, Mrs. Mary Alice Kimball of White Plains, N. Y., and Dr. Charles Stanley White, Jr., who is his father's partner.

An enthusiastic traveler, Dr. White and his wife went to Costa Rica this winter.

"I've been in every state of the union and to Europe 3 or 4 times. Last year we went to Peru. We saw the lost cities of the Incas," he said, his eyes lighting up.

Dr. White will add to his many honorary awards Friday when the Southern Medical Association names him "Doctor of the Year" at its Doctor's Day celebration in the Columbia Medical Building. The Woman's Auxiliary is planning the event, and Dr. White—who once answered the question, "What is the longest muscle in the human body?" with the quip, "A woman's tongue"—spoke with masculine tolerance of their plans.

The Evening Star, March 31, 1962

"'Doctor of the Year' Honor to Dr. White"

by Frances Lide

Cited as the "Doctor of the Year" by the District of Columbia Woman's Auxiliary to the Southern Medical Association, Dr. Charles Stanley White, Sr. took an inventory of some of his "assets" before persuading himself he could accept the honor at a reception yesterday.

"When I first learned of my nomination, I thought it was for 'doctor of the years,' " declared the well known Washington surgeon who will mark his 85th birthday in July. "I didn't think I was qualified—except for my age."

But everybody likes praise, he noted.

Tributes included a telegram to Dr. White from HEW Secretary Abraham Ribicoff, who extended "congratulations and best wishes in behalf of the President and the Department of Health, Education and Welfare as you receive the richly deserved honor of 'Doctor of the Year.' "

"Your lifetime of distinguished services to the health of thousands of Americans merits the profound gratitude of your colleagues and the entire Nation," Mr. Ribicoff added.

DR. WHITE, 60 years later (1962), receiving the "Doctor of the Year" Award from Mrs. Roger S. Williams for the District of Columbia Auxiliary to the Southern Medical Association.

If he has a secret for maintaining a zest for life, it probably is embodied in some lines he quoted yesterday from a short dissertation on age that he read somewhere:

"Nobody grows old by merely living a number of years. People grow old only by deserting their ideals. Years wrinkle the skin, but to give up enthusiasm wrinkles the soul. . . ."

The Evening Star, October 14, 1963

The Rambler (John McKelway) Comes Across a Medical Book

The Rambler picked up a small book the other day, written by a Washington surgeon. It contains the recollections and reflections of Dr. Charles Stanley White and is called "Surgical Interlude." . . .

*
She lost weight

***a result of**
'METHEDRINE'® brand
METHAMPHETAMINE
HYDROCHLORIDE
therapy

Her once unruly appetite is now well tamed with 'Methedrine' (methamphetamine hydrochloride)...an easy way to help control food craving and "hunger pains."

Side effects: Insomnia may occur if taken later than 6 hours before retiring. The usual peripheral actions of sympathomimetic amines (vasoconstriction and acceleration of the heart) are minimal and little noticed on low or moderate dosage.

Complete literature available on request from Professional Services Dept. PML

Contraindications and precautions: Should not be used in patients with myocardial degeneration, coronary disease, marked hypertension, hyperthyroidism, insomnia or a sensitivity to ephedrine-like drugs. Moderate hypertension in the obese is not necessarily a contraindication since it may be relieved as the overweight is reduced.

'Methedrine' brand Methamphetamine Hydrochloride: Tablets–5 mg., scored, in bottles of 100 and 1000.

BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, N.Y.

Dr. White has some advice for the youngsters coming along in his profession.

"Too many physicians neglect their own health, not because of lack of time, but because they do not realize its importance. On the other hand, indulging in sports is often overdone. If a physician has a family, much of his leisure should be spent with it; his success or failure may hang on these relations."

Dr. White, in summing up and in attempting to relate what has impressed him most over a period of some 60 years in medicine, indicates he might like to repeat the answer given by a man who had visited a World's Fair.

Asked to tell what was the most outstanding feature of the fair, he replied, "My feet."

But Dr. White puts it this way in the close of his book:

"We are living in a wonderful country and a wonderful age. We should be worthy of our heritage."

The Editors: Dr. White, we think these records offer abundant proof that you rank high among those worthy of our heritage.

More Journals for Colleagues Abroad

The Journal Exchange Committee of the Medical Society of the District of Columbia is continuing its efforts to match physicians in Washington with colleagues abroad who desire to receive American medical journals. There have been many requests, and a considerable number of Washington doctors are sending journals, either new, as gift subscriptions, or used, but fairly current.

A group of colleagues in Pakistan are now interested in receiving the following journals*:

1. Journal of American Medical Association
2. Practitioner
3. Annals of Surgery
4. American Journal of Surgery
5. Surgery, Gynecology & Obstetrics
6. Surgery
7. Archives of Surgery
8. Journal of Bone & Joint Surgery
9. American Journal of Plastic Surgery
10. Journal of Clinical Investigation
11. New England Journal of Medicine

Will those willing to participate please contact Dr. George Anagnos (District 7-2740) for details concerning mailing, etc.

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* Beginning January 1, 1964.

Health Dept. Notes

An Effective Cancer Registry

Although cancer has been a reportable disease in the District since 1951, and although a Cancer Registry has been maintained in the Department of Public Health, neither new case reporting nor the resultant records have been utilized as they might be. Also, data in the Registry have seldom been evaluated or published; rather, they have simply accumulated.

To demonstrate how useful such a Registry might become, our Bureau of Chronic Disease Control has made an analysis of the first thousand new cancer cases reported in 1964. The report period was the first 3½ months of that year; the report sources were D.C. hospitals, physicians and pathologists.

It must be noted that these represent only the first thousand new cases *which were reported.* The Department is certain that much more cancer occurred than appears in these reports. Further, there were omissions within the reports which preclude anyone reaching conclusions as to the incidence of cancer. The data therefore do not permit projective interpretation nor indicate the pattern of the disease in the District.

But the study does demonstrate how productive a Cancer Registry could become, with data which are complete and accurate and are compiled into a working resource file. It is therefore our hope that an effective Registry be established and maintained, in coöperation with hospitals and the medical profession in D.C.

These are some of the findings of the first 1,000 reported new cases of 1964:

Over half (503) were female; just under half (497) were male

18 per cent were under age 45; 69 per cent were ages 45–74; 12 per cent were over age 75

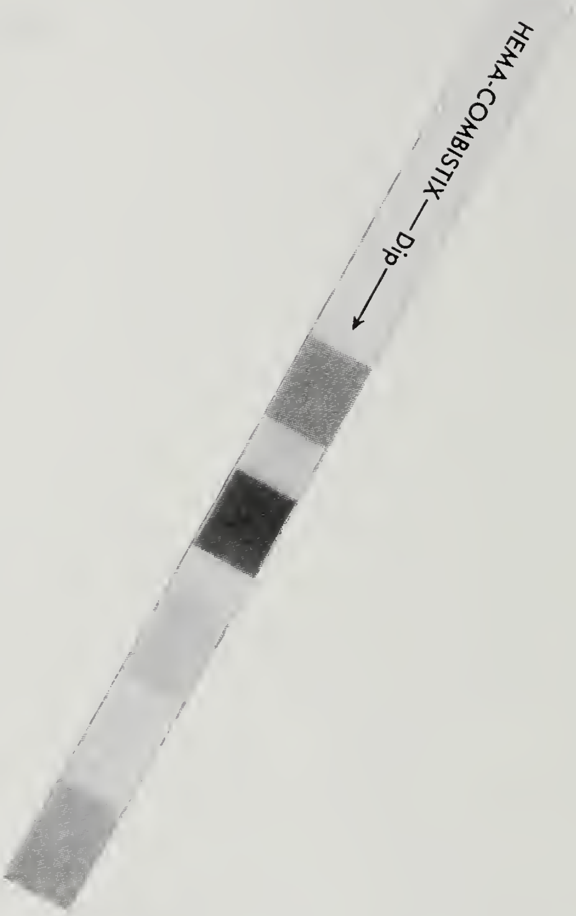
214 cases concerned digestive organs; 175 cases were of the genital organs; other groupings were smaller

43 per cent were localized and early cancer; 32 per cent were regional; 18 per cent were late and metastasized

Histologic diagnosis was made in 89.4 per cent of the total 1,000 new cases

Localized tumors were usually diagnosed histologically; remote tumors, by X-ray, clinically or otherwise

Corpus uteri and prostate cancer were most often found in persons over age 50; digestive, lung, breast, skin, genitals and cervix uteri in ages 30 and over; leu-



THE POWER OF NEGATIVE THINKING

No doubt you have attached diagnostic importance to negative findings for years. When you apply your stethoscope, all is usually normal. When you test for reflexes you generally find them normal, too. In your routine urine checks with dip-and-read **HEMA-COMBISTIX**T.M. Reagent Strips, you generally discover that urinary blood, protein, and glucose are absent, and pH normal. But when you discover an abnormal finding you may, within 60 seconds, have detected pathology well in advance of the appearance of related symptoms. ☐ Ames Company, Inc., Elkhart, Indiana. 68964

AMES

kemia, lymphosarcoma, and others were common to all ages

61 per cent of the patients had surgery; 19 per cent had surgery plus other therapy; 7 per cent received no treatment; data were incomplete on remaining per cent

Hospitals reported 82 per cent of the cases; physicians, 7.5 per cent

One Washington hospital reported 4 times more cases than did any other single hospital, and several major hospitals neglected to report any new cases during this time (3½ months).

This summary indicates that much significant information can be developed through a proper Cancer Registry. There is great potential usefulness in such a Registry for hospitals, the practicing physician, and public health officials. Its value is apparent.

Accordingly, the Disease Control Committee of the Public Health Advisory Council has recommended that procedures be developed to permit uniform, accurate and complete reporting of new cancer cases by hospitals and physicians and that these data be coded and compiled to form a central Cancer Registry for public and professional purposes. The new Registry should begin with cancer reports for 1964; accumulated earlier reports will not be included at this time.

The Department of Public Health anticipates that this coöperative endeavor will become one of the more useful services to benefit residents of the District of Columbia.

MURRAY GRANT, M.D., D.P.H.
D.C. Director of Public Health

Help Needed for Foreign Students with Emotional Problems

THE WASHINGTON SCHOOL OF PSYCHIATRY has been taking a renewed and lively interest in the emotional problems sometimes experienced by foreign students in this country.

It is expected that several different aspects of the problems of foreign students will be studied with a view to possible actions both remedial and preventative. It is understood that the strictest adherence to the usual rules governing the confidentiality of the patient-doctor relationship will be observed.

As steps in these directions The Washington School of Psychiatry is inviting the interested membership of the Medical Society of the District of Columbia to please contribute any available information concerning: (1) physicians, psychotherapists and clinics that would be interested in treating foreign students and that would make an effort to fit them into their busy schedules; (2) physicians, psychotherapists and clinics that are at present or were at one time actively treating or involved with the problems of 1 or more foreign students; (3) types of problems encountered by foreign students at present undergoing medical or psychiatric treatment or who have had medical or psychiatric consultations with or without treatment; and (4) suggestions and opinions concerning particular problem areas of foreign students or methodologic approaches to their study.

Please direct your communications on these matters to Dr. Jean H. Menetrez, 1610 New Hampshire Avenue, N.W., Washington, D. C. 20009; telephone North 7-3008.

Medicolegal Abstracts

A PATIENT in Florida settled his claim against an individual who caused an automobile accident. Under common law this settlement would also have released the patient's physician from liability. The patient could not then sue him even if he felt that the treatment was negligent. However, the appellate court ruled that this common law principle had been abrogated by statute and allowed the patient to sue the physician.

In Texas the Supreme Court ruled that the parents of a child who died after an accident could not sue the child's physician for negligence. The parents had executed a release to the driver of the taxi which struck the child, and the court held that this automatically released the physician who treated the child after the accident.

COMMENT: At common law the release of 1 joint tort-feasor operates as a release to all other joint tort-feasors. This implies that the person causing the damages assumes in effect responsibility not only for the injuries he caused but also for any further damages resulting from negligent treatment of those injuries. The Texas court upheld this principle, but the Florida court indicated that a specific statute had modified it. Many jurisdictions have enacted such statutes.

M-L

In Rochester, New York, a hospital was held not liable for damages because of a Staph. infection which a patient developed. There had been a series of Staph. infections in the hospital, and several investigative steps had been taken to locate the origin. Although one medical student failed to make some phage tests as instructed, this was not demonstrated to be a definite factor in causing the patient's infection. The court ruled that even if the hospital had been negligent, such negligence was not the proximate cause of the infection.

COMMENT: In the eyes of this court, at least, a person cannot collect damages from a hospital simply because he picked up a Staph. infection while a patient there. He must demonstrate that this infection was caused directly by the hospital's negligence.

* * *

The question of waiver of the physician-patient privilege becomes perplexing when another physician who treated the same case is called to testify. An Iowa court clarified it somewhat by its recent ruling: If a patient calls one physician to testify, this act waives the physician-patient privilege in regard to all other physicians who treated the patient in consultation if all the physicians were engaged in a unified course of treatment. This waiver does not apply if several physicians treated the patient one after the other, but independently.

* * *

In New York State the ambiguous phrase "usual and customary charges" was scrutinized. In this case, a physician charged $750 for an operation. The insurance company refused to pay more than $500, claiming that $750 was in excess of the "usual and customary charges." It pointed out that the surgeon enjoyed an unusually fine reputation, and that his fee was higher than that of other surgeons in his locality. The court, however, indicated that "usual and customary charges" may refer either to the fees of the individual physician performing the services or to the average charges of the physicians in the same area. It ruled that this ambiguity must be resolved against the insurer.

COMMENT: This decision supports the right of individual physicians to levy their own fees. Its effect, though, may be to stimulate more precise language in insurance policies.

* * *

Expert witnesses are not always allowed to set their own fees. In 2 separate cases in 1964 courts in Louisiana asserted their right to establish the fee for expert witnesses. In 1 of those cases a higher court upheld that right.

ROBERT R. MONTGOMERY, M.D.

An Invitation to an Embassy Party

THE WOMAN'S AUXILIARY to the Medical Society of the District of Columbia, of which Mrs. Hugh O. House is President and Mrs. Thomas Nelson Carter is Ways and Means Chairman, will hostess an evening embassy party at the Embassy of Iran, on Saturday, April 3, 1965.

Proceeds of the party will be turned over to the American Medical Association Education and Research Foundation and the Woman's Auxiliary Nursing Scholarship Fund.

Invitations will be issued and reservations will be limited, so please note on your calendar the April 3 date. All the ingredients of a most enjoyable evening for Medical Society members and guests will be available.

Medical Arts Society

THE MEDICAL ARTS SOCIETY, one of the City's early honor medical societies, was created in 1932 to bring together a group of friendly physicians for medical discussion and to establish a more intimate social relationship.

Those who attended the first meeting and founded the Society included Drs. Joseph Greenlaw, Robert Bier, Walter Stokes, Harry Davies and Russell Fields. The group expanded rapidly to some 30 members, usually limited to 1 or 2 from each specialty, with general practitioners included in slightly larger numbers.

It has met continuously each month since that time. One meeting, held each year in the spring, has been an annual banquet to which an outstanding speaker was invited. Frequently this has been followed by a social hour and entertainment. It has always been an outstanding event for the membership and guests.

Over the years the membership of the Society has totaled 115 physicians, 14 of whom have died.

Each member holds a beautiful certificate of membership which credits him with "recognition of his superior personal qualifications and achievements in his chosen field of medical endeavor."

Without exception its members have done credit to the local medical fraternity and, as its name implies, to the "medical arts" of our great community.

RUSSELL J. FIELDS, M.D.
Historian

Freedom, Conscience, and Authority

THE REVEREND GEORGE M. DOCHERTY

Pastor, New York Avenue Presbyterian Church, Washington

DR. DEN in his article, "The Doctor's New Dilemma," outlined a case which raised a problem of human relations, involving the practice of medicine and spilling over into the fields of religious faith and legal practice.

The case referred to concerned a woman hospitalized and in critical condition from a ruptured bleeding ulcer. A member of Jehovah's Witnesses, she refused on religious grounds a blood transfusion deemed life-saving by her physician. The patient's husband concurred in her right to refuse blood. The physician nevertheless sought a judicial order from a judge of the Court of Appeals of the District of Columbia, obtained an emergency writ, and duly administered the blood transfusion. The patient survived.

The questions a Presbyterian minister such as myself must ask are: Where is the authority in Scripture for such a blood prohibition? And if there is such a prohibition, is it binding upon Christians? Was the patient right, qua Christian, in refusing the prescribed treatment of blood transfusion? Even if the patient misread the Scriptures, how far has the medical profession the right to impose its will, albeit a will to heal, upon a patient who has what might be described as a "conscientious objection"?

1. *Biblical exegesis.* The woman, a member of Jehovah's Witnesses, found her authority for conscientious objection to blood transfusion in several passages of Scripture. After the Flood God made a covenant with Noah in which among other directives as to food there is the specific injunction, "Only you shall not eat flesh with its life blood, that is, its blood" (Genesis IX: 4, American Revised Translation, from which all other Scripture quotations are taken).

This primitive saying was later codified as part of the Mosaic Law and is quoted in several places:

> "For the life of every creature is the blood of it: therefore I have said to the people of Israel, You shall not eat the blood of any creature, for the life of every creature is its blood; whoever eats it shall be cut off" (Leviticus XVII: 14).

In the setting of the Mosaic Code, the prohibition takes on a wider significance than it had in the earlier Noahic Covenant. Three reasons, explicit and implicit in the Hebrew view of life, may be given for this rule.

(a) Since the Greek philosopher Plato, Western Culture has tacitly divided the structure of human personality into body, soul, and spirit. This tripartite body-soul continuum constitutes human personality. The Hebrews held a monistic view of body-soul. They regarded no ontologic distinction between body and soul. The body was the soul and the soul the body. If they spoke at all about a "location" of the soul it was the blood. The blood was the soul, the seat of the life. Therefore, to partake in any way of the blood of animals was to eat the soul of the animal. To the Hebrew this is prohibited, though it is interesting to note that no such prohibition was laid upon aliens who may be sold or served meat that is not kosher: "You may give it to the alien who is within your towns, that he may eat it, or you may sell it to a foreigner, for you are a people holy to the Lord your God" (Deuteronomy XIV: 21).

(b) To drink blood or eat blood flesh was an abomination, since this was the practice of heathen peoples. As part of pagan worship the blood of the victims was drunk. This cannabalism was revolting to the Hebrew. Thus the Psalmist declares:

> "Those who choose another god multiply their sorrows; their libations of blood I will not pour out or take their names upon my lips" (Psalm XVI: 4).

(c) A third implicit reason stems from the remarkable Mosaic Law which provided a code concerning the whole of life. While its origin is the Divine Revelation of God dealing with His People, the Mosaic Law contains sound advice concerning property, town-building, housekeeping, and even hygiene. Thus the Law recognized the danger in eating, for instance, the flesh of bulls that was not kosher. Both Strabo and Heroditus refer to the poisonous effects of bull's blood.

2. *The Christian position.* "What has this to do with Christianity?" Historically, Christianity stemmed from Judaism. The first generation of Christians were largely Jews. The break away from Judaism was gradual and not without conflict. When Peter went to preach to the Samari-

tans, the hereditary enemies of the Jews, and Paul himself left preaching in the Jewish synagogues and sought to convert the Gentiles, we are aware of the widening gulf that gradually separated historic Christianity from the Jewish faith, both in faith and practice.

It was, however, to be expected that at the outset the customs and the outlook of the Hebrews would greatly influence the Christian witness of the early Church.

When the first Council of the Christian Church took place in Jerusalem at Pentecost about the year 44 the main subject dealt precisely with the problem of the conflict between the requirements of the Mosaic Law over against the New Covenant of the Law in Christ (Acts XV). The main controversy centered around circumcision and baptism. Must a Gentile converted to the new faith submit to baptism? This issue Peter and Paul heatedly debated. The Council itself, according to St. Luke, the author of The Acts, enumerated certain requirements laid upon the new converts, all of which stemmed from Hebrew law and practice, but recognized it was not necessary to be circumcised as a prior requirement for baptism and admission to the Church. Then the Church declared, and this is germinal for our discussion, that these new Gentile converts should "abstain from the pollutions of idols, and from unchastity and from what is strangled and from blood."*

However, this recommendation of the Council of Jerusalem itself was to be questioned and put into the context of the new freedom that came in Christ by St. Paul himself. The Church in Corinth had written to Paul seeking guidance on the subject of "pollutions of idols" arising from the problem that faced the Gentile Christian when invited to a Roman banquet at which the meat at the table had already been "offered" (we would say toasted) to Caesar as God. In reply (I Corinthians VIII) Paul attacks the whole idea of "pollution" in this context. "An idol has no real existence," he claims. "We are no worse off if we do not eat and no better off if we do." Then the wise pastor in Paul adds, "Only take care lest this liberty of yours somehow become a stumbling block to the weak." So much for the edict of the Council of Jerusalem on meats. And so much for an attempt at literalism with the written words of Scripture.

If we are to take literally Genesis IX, nowhere is there a specific prohibition of "blood transfusion" administered to a patient in a hospital who is dying from loss of blood. It might be deduced or reasoned that blood transfusion is a kind of eating of blood. Are not the critically ill fed glucose intravenously? But the reasoning in this instance is not inherent in the Word of God but is a deduction from a preconceived notion about blood eating by the fundamentalist exegete. "Blood eating," as understood by Noah or Moses or the Council of Jerusalem, is not to be identified with the modern medical practice of blood transfusion by anyone who takes the verbal inerrancy of Scripture seriously.

St. Paul's attitude toward the legalistic fulfillment of the letter of the Mosaic Law is expounded in the Epistle to the Romans. The Law does not by itself save us. The Law is his schoolmaster. Christ is the New Law who fulfills the Old Law, not in letter but in spirit.

This principle is true to the witness of Jesus and his dealings with the Law. Our Lord and his disciples are accused of breaking the Sabbath Day by plucking ears of corn (since garnering on the Sabbath is forbidden by the Law). Thereupon Jesus justifies the breaking of the Sabbath Day under certain circumstances (St. Matthew XII: 1–28). What is more significant for our case is that our Lord proceeds to heal on the Sabbath Day despite the suggestions that it was against the Law.

The principle here is that mercy, whether toward a sheep caught in a thicket or a pit or toward a man with a withered hand, is far more important than the mechanical observance of the Law. Human life is more sacred than legal codes. This is further illustrated in the parable of the Good Samaritan. The Samaritan succors a man who had been beaten and left at the roadside to die. Both the Priest and the Levite, no doubt thinking the man to be dead, were prohibited from being involved in the situation by the Law's requirements of ceremonial purity for a Priest or Levite about to participate in the Temple service.

The Role of Conscience

The part played by conscience in this case is complicated in many ways, not least by the fact that there is not one but at least 2 consciences involved, that of the patient and that of the doctor, and indeed, in an indirect way, the conscience of the judge.

The judge who was called upon to confirm the application for an emergency writ to give the

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* Acts XV: 19–20. "Therefore my [St. Paul's] judgment is that we should not trouble those of the Gentiles who turn to God but should write to them to abstain from pollutions of idols and from unchastity and from what is strangled and from blood."

Transfusion—Confusion

J. JOSEPH BARSE
Partner in the law firm of Welch, Daily & Welch, Washington, D.C.

Mr. Barse and his firm have made a specialty of trial practice in civil litigation, including the defense of many malpractice cases. He will discuss the legal viewpoint of "The Doctor's New Dilemma" in the May issue of the ANNALS.

doctor permission to administer the blood very commendably went beyond his office as lawyer and became a friend. First of all, he ascertained the medical diagnosis and treatment from the doctors on the case at the hospital. This was that without a blood transfusion death would, as certain as medical knowledge can be in such matters, immediately follow. The judge then pleaded with the husband and encouragingly spoke to the patient who at that moment, entering a state of coma, was incoherent in response. When he signed the writ he did so because he thought he was "on the side of life."

It must be left to the lawyers and courts to rule upon the actions of the judge in question. It may be that he was not acting, qua lawyer, legally in what he did. Let the courts decide that. The theologian and the moralist are concerned about the idea of human conscience. The question here in this context, assuming the existence of a conscience, concerns the conscientious behavior not merely of the patient but of the doctor.

This brings us to some evaluation of the concept of conscience. The idea that man by his nature from time immemorial has been endowed with a static and final "faculty" that is able to discern correctly and finally right from wrong in every situation at any time in his development, both as man throughout the ages or as a person during his lifetime, is gravely to be questioned. As a norm of behavior, conscience varies from age to age. South Sea Islanders with the clearest Polynesian consciences used to feast upon the bodies of their departed parents as part of the funeral rites, no doubt believing that the virtues of their fathers would then inhabit their bodies. In the name of a clear Christian conscience the Tudor Queen Mary I (1516–1558) of England, known in history as "Bloody Mary," condemned Protestant heretics to be burned, sincerely believing that it was better for their bodies to be burned than that their souls should be lost in hell. One of the most sensitive tasks during the War was to determine at the tribunals for conscientious objectors what was the basis for their pacifism. In the face of what might have seemed spurious reasons for pacifism the tribunal nevertheless, if the beliefs held were believed to be conscientious, granted exception not because of the belief but because of the conscience.

The patient who has a conscientious objection to blood transfusion on the grounds that it would violate her religious beliefs is in a very strong position. She has the support of the First Amendment to the Constitution which preserves her right for the free exercise of her religion. On the other hand, no amount of argument about textual exegesis of Scripture nor the evidence of the evolving revelation of God's will in the Bible (Polygamy, which is apparently a morally accepted standard of the patriarchs, is explicitly condemned in the New Testament.) will alter her conviction if it is sincerely and deeply a matter of conscience. She has the right to be wrong. And she has proprietory right over her own body. She has "the right to be left alone."

In the case of the doctor, he too has a conscientious attitude to his work. Even if his Hippocratic Oath is pre-Christian, a practicing Christian may believe conscientiously that the practice of medicine is continuing the healing ministry of Jesus. His aim in life is to save life, not to destroy it. For him to be refused permission to give a blood transfusion is a grave challenge. It prevents him from saving life.

Thus, in the case before us we have a contradiction of conscience on the part of the doctor and the patient. This contradiction also involved the medical authorities in a dilemma. With the permission of her husband the patient sought the help of the hospital; she came of her own free will. As soon as she was in the hospital she refused the only possible treatment, according to the 4 doctors present, namely, blood transfusion. The husband at least now knew that he had placed the hospital in an intolerable dilemma. If they gave her a blood transfusion against her will they would violate her freedom as a person. If they did not, the hospital would be charged with criminal negligence. That the husband was prepared to sign a paper waiving, on his part, any charge of criminal negligence does not help in any way the conscience of the doctor who knows in his soul that he would be criminally negligent if the patient were not given the transfusion.

This points up another aspect of conscience. Conscientious decisions, like all other human decisions, are never made in solitariness. We are all involved in society. We are by nature condemned or honored to live with other people. For some like Jean-Paul Sartre, this is hell; for others, like the average Christian, this enriches human life. Each behaves conscientiously, therefore remembering the rights of others. Only in extreme circumstances should conscience be utterly selfish and solitary.

Again, we ought to have a conscience toward the well-being of the body. The body is the gift of God. There is no evidence in this case to show that the patient or her husband disapproved of the treatment as such. It was, from the first, a conscientious objection based upon the school of Scriptural thought held by the Jehovah's Witnesses. If she claims she must obey God rather than man she must also be aware that this is not the antithesis. For by seeking the healing of the body she is also honoring God, since the body is the temple of the Holy Ghost. Her behavior looks very like a self-induced suicide. The woman was acting contrary to the sanctity of the body, which is always sacred in Scripture. When a Buddhist monk makes witness unto death by self-sacrifice for conscience' sake he is choosing this way to witness to a truth; but this patient did not wish to die at all, least of all the death of the martyr.

On one occasion 2 brothers who were arguing about their inheritance asked our Lord's advice. "Man," replied Jesus, "who made me a judge or a divider over you? Take heed and beware of all covetousness" (St. Luke XII: 13–14). This must always be the ultimate answer of the moralist. We must go back to first principles. The doctor's first principle is the fundamental urge to heal, but the patient's first principle is the right to be let alone, the right to decide the destiny of her own body, and to accept whatever may be God's final judgment.

Beyond that principle the moralist cannot go. The integrity and freedom of every soul are written large across the pages of the New Testament.

It must now be left to the medical profession to work out the necessary practical details, making it clear, for instance, that a patient who is admitted to any hospital for whatever sickness might be subject to blood transfusion, and if there is a conscientious objection by the patient, she must not begin to seek hospital aid but take the consequences of her conscience.

It must then be left to the lawyers and judges to codify the procedures in the light of this fundamental principle of human freedom.

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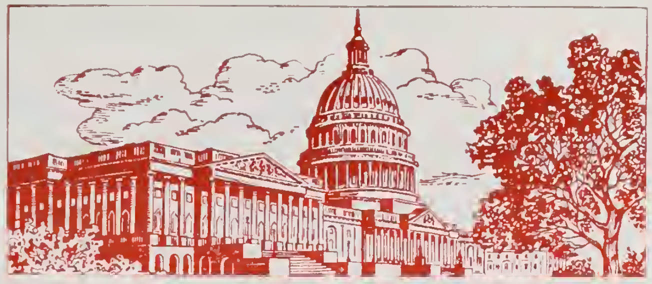

NEWS & PERSONALS

Summary of Executive Board Actions

The Executive Board of the Medical Society of the District of Columbia was invited to a dinner meeting at the home of the Chairman, Dr. Victor R. Alfaro, December 21. The Chairman was host to the following members: Dr. C. Willard Camalier, Jr., Karl C. Corley, J. Spencer Dryden, Harold M. Hobart, Raymond T. Holden, Edward W. Nicklas, Josephine E. Renshaw, Duane C. Richtmeyer, Paul R. Wilner, and Mr. George W. Cooley, Secretary. At the conclusion of the dinner Dr. Nicklas presented the retiring Chairman and Mrs. Alfaro a gift from the Board members in appreciation of his services and as a memento of their esteem. The business meeting was called to order by the Chairman at 9:00 p.m.

Committee Meetings: The Secretary reported that the following meetings had been held since the last meeting of the Board:

November	24	Grievance Committee
	24	House Committee
December	3	Committee on Child Welfare
	4	Review Board for Prepaid Medical Care Benefits
	8	Ad Hoc Committee on Rheumatic Fever Registry
	9	Liaison Committee with Pharmacists
	10	Medical Bureau Committee
	11	Committee on Public Health
	14	Committee on Cancer Control

Board of Credentials: The Executive Board approved the following recommendations of the Board of Credentials:

Resident-Intern Member

Richard Austin Nicklas, 5015 Fulton Street, N.W.

Transfers

Active to Special: E. Osmun Barr, Edgar W. Davis, Stuart O. Foster, Beveridge Miller, and Millard F. Ottman

Active to Associate: Frederick Y. Donn, George I. Mishtowt, Stanley P. Porton and Irwin W. Rovner.

Resignations

Active: Howard S. Madigan, John A. Sanders and O'Donnald H. Sheppard
Affiliate: Nicholas G. Pistolas
Associate: Matthew J. Ellenhorn

Delinquent Members: The Secretary furnished a list of those members who had not paid dues for 1964 and the Board voted that such members should be dropped from the rolls.

Potential Income: The Secretary reported that on the basis of present membership and the increase in dues, the potential income would be about $140,000 in 1965 compared with $115,000 in 1964.

Life Members: In accord with the change in By-laws Life membership was conferred upon 60 physicians who had reached the age of 70 and had been Active or Special members for 10 years or more.

Public Relations Representative: Dr. Nicklas reported that several approaches had been made to the Society to put on television programs. The Secretary pointed out that with the increase in dues it had been understood that a part-time public relations representative would be added to the staff. The Board voted to authorize the Secretary to interview applicants for such a position; that they be screened through the Committee on Public Information and Education, or a subcommittee appointed by Dr. Warren D. Brill, and that the recommendations be brought to the attention of the Executive Board.

AMA Clinical Session: Dr. Holden reported for himself and Dr. Camalier on the meeting of the AMA's House of Delegates, in Miami Beach, Fla., November 29–December 2, 1964. (This report was published in the February issue of the Medical Annals.) The report was accepted by the Board. It was voted to notify the AMA that the D. C. Medical Society would coöperate in the proposed communications program by having a teletype installed in the Society's offices.

It was further agreed that if Congress does not act on "Medicare" between the present and the next meeting of the House of Delegates, that consideration be given to introduce again the resolution originally brought before the House at Miami Beach with such revisions as seem indicated.

AMA's Advertising Campaign: Dr. Renshaw reported on the meeting that she and Dr. E. Herbert Bauersfeld attended in Chicago at the request of the Board. She outlined the program presented, pointing out that very little new information was released and that she was not certain exactly as to how the AMA would proceed with such an advertising campaign. The Board accepted the report with appreciation to Drs. Renshaw and Bauersfeld for attending the meeting.

After some discussion with reference to the situation in the District, it was voted that the President should consider calling a special meeting of key people on this problem following the January 9–10 AMA Conference on Kerr-Mills.

Cancer Control Committee: The following recommendations from this Committee were considered:

"1. Prior to each annual meeting of the D. C. Division of the American Cancer Society, the D. C. Medical Society nominate 2 members to serve on the Board of Trustees of the D. C. Division of the American Cancer Society as official representatives of the Medical Society; and,

"2. All medical programs instituted by the D. C. Division of the American Cancer Society be submitted to the D. C. Medical Society for approval prior to being put into effect."

The Board did not believe it to be in the best interest of Medical Society-Cancer Society liaison to accept either recommendation at this time.

National Conference on Cardiovascular Diseases: Dr. Hobart reported on this Conference which he had attended along with Dr. Bernard J. Walsh. He stated that an amount up to $500 was available for further planning to local groups. The Board voted to request $500, as outlined in the application form, and to contact officials of the Washington Heart Association, urging them to also avail themselves of the same amount.

Editorial Board of the Medical Annals: Dr. Wallace M. Yater, Editor, presented the name of Dr. Brian Blades to succeed Dr. Charles Stanley White, who resigned from the Editorial Board some time ago. The Board approved the nomination.

Kober Lecture: Members of the Committee for the Selection of the Kober Lecturer, Drs. Nicklas, Yater, and William P. Herbst, recommended that Dr. Sol Katz be nominated to present the 1965 Kober Lecture. The Secretary was requested to so notify the President of Georgetown University.

Disciplinary Action Against Members: A letter from Dr. Irving Burka, Chairman of the Grievance Committee, was read and considered. The Secretary was asked to review the minutes of the Executive Board for several years past to determine whether any action in regard to publicizing the censuring of members had ever been taken. It was suggested that such information might be included in the *Newsletter.*

Tax Hearing on New Building: It was agreed that Drs. Alfaro, Nicklas, Wilner, and Frank S. Pellegrini should meet with Mr. John A. d'Epagnier and Mr. Warren E. Magee on January 11 to discuss the tax hearing which was scheduled for January 12. It was also agreed that 2 or more from this group should represent the Society at the hearing.

There being no further business, the meeting was adjourned.

January 18, 1965 Meeting

Dr. Richtmeyer presided as Chairman of the Board for the first time at its meeting in the Medical Society's building, January 18. Present were Drs. Camalier, Corley, Dryden, Holden, Nicklas, Wilner, and Mr. Cooley, Secretary. Also present were Dr. Robert J. Coffey, the new President-elect, Dr. Darrell C. Crain, First Vice President, and Dr. Kenneth L. McCoy, Second Vice President. The meeting was called to order at 7:45 p.m.

Committee Meetings: The following committee meetings had been held since the last meeting of the Board:

December	29	Committee on Medical Care
January	6	Scientific Assembly Program Committee
January	13	Committee on Aging
January	13	Board of Credentials
January	15	Review Board for Prepaid Medical Care Benefits

Board of Credentials: The Executive Board approved the following recommendations of the Board of Credentials:

Active Members

Burton Seymour Epstein, George Washington University Hospital
Harold Melton Hagen, George Washington University Hospital
Felix Pierpont Heald, Children's Hospital
Joseph Neill Kennedy, Mt. Alto Veterans Administration Hospital
Ernest Kopstein, 7703 Carroll Avenue, Takoma Park, Md.
Thomas Courtney Lee, Georgetown University Hospital
Spencer Fleetwood Maddox, 3400 Massachusetts Avenue, N.W.
Ruben Perez, 1150 Connecticut Avenue, N.W.
Manuel Wigberto Roman, 3000 Connecticut Avenue, N.W.
Allan Z. Schwartzberg, Georgetown University Hospital
Henry Albert Segal, 1610 New Hampshire Avenue, N.W.
Stanley McClellan Sinkford, Freedmen's Hospital

Associate Members

Juan Babtist Calatayud, George Washington University Hospital
Byungkyu Chun, Georgetown University Hospital
Hau Cheong Kwaan, 5401 Western Avenue, N.W.
Iradj Mahdavi, 6607 Riverdale Road, Riverdale, Md.
Jo Shibuya, Washington Hospital Center

Resident-Intern Member

Herbert Andrew Urweider, Washington Hospital Center

Transfers

Active to Special: Richard W. Mattingly and William G. Sorrell
Active to Associate: Salo Albini, Dorothy R. Brodie, Alejandro F. Castro, and Mary K. L. Sartwell

Resignations

Active: Edward H. Bowen, Jr., Jesse F. Casey, and Irene E. Roeckel
Associate: Brig. General Robert E. Blount, MC, USA, John T. Hart, and Owen C. Shull

Finance Committee: A new Finance Committee was selected consisting of the Chairman of the Board, the Vice Chairman, the President-elect, and the Secretary-Treasurer.

Bids on New Building: The Secretary reported that since bids were to be received January 28, shortly thereafter it would be necessary to either borrow additional money or complete the sale agreement with Mr. Dominic F. Antonelli, Jr. The Board voted to instruct the House and Building Fund Committee to follow the least expensive procedure and to report its decision to the Finance Committee.

The Secretary also reported that bids on the new building were scheduled to be delivered by 4:00 p.m. on January 28 and asked for a selection of individuals to review the bids. Selected were the Chairman of the Board, the Chairman of the House and Building Fund Committee, the President of the Society, and the Secretary-Treasurer, with the architect to be in attendance and that any decision made be reported to the Executive Board.

Ruffin and Other Bequest Funds Committee: The Secretary reported that this Committee desired to make a gift of a television to Dr. Henry C. Macatee, for many years Secretary of the Society, who is in a local nursing home. This action was approved by the Board.

The Board also granted this Committee the authority to spend up to $500 of Bequest Fund money before approval of the Board is needed.

Publishing of Constitution and By-laws: The Secretary stated he had received a printer's estimate of $1,750 for printing 4,000 copies of the Constitution and By-laws. Up to this amount was therefore authorized by the Board, the Secretary to determine the number of copies to be ordered.

Committee on Aging: The Secretary reviewed the fifth draft of a proposal for an MAA (Medical Assistance for the Aged) Plan for the District of Columbia as recommended by this Committee. Various sections of the draft were discussed at some length. It was voted to increase the suggested income ceilings to $2,400 for a single person and $3,600 for a couple. This draft was then approved as amended with such editing as the Chairman, Dr. Jack Kleh, might feel necessary.

The Secretary was authorized to complete this document and forward copies to the District Commissioners, the Director of the Department of Health, the Director of the Department of Welfare, and the House and Senate District Committees.

A motion was also carried to commend the Committee on Aging for its long and trying task in developing this program and to express the appreciation of the Executive Board for its work.

Child Welfare Committee: At the last meeting of this Committee, Dr. Thomas E. Reichelderfer reported on a serious problem of bed congestion at D. C. General Hospital because healthy children who had been abandoned were placed in beds at this hospital. The Committee had agreed that these beds could be better utilized and

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References: **(1)** Warres, H. L.: *Missouri Med.* 61:27, Jan., 1964. **(2)** Palmer, K. J.: *Week. Urol. Clin. Letter* vol. 6, no. 36, Dec. 24, 1962. **(3)** Carroll, G.: *J. Urol.* 90:476, Oct., 1963. **(4)** Ward-McQuaid, J. F. N. C.; Jichlinski, D., and Macis, R.: *Brit. M. J.* 2:1311, Nov. 23, 1963.

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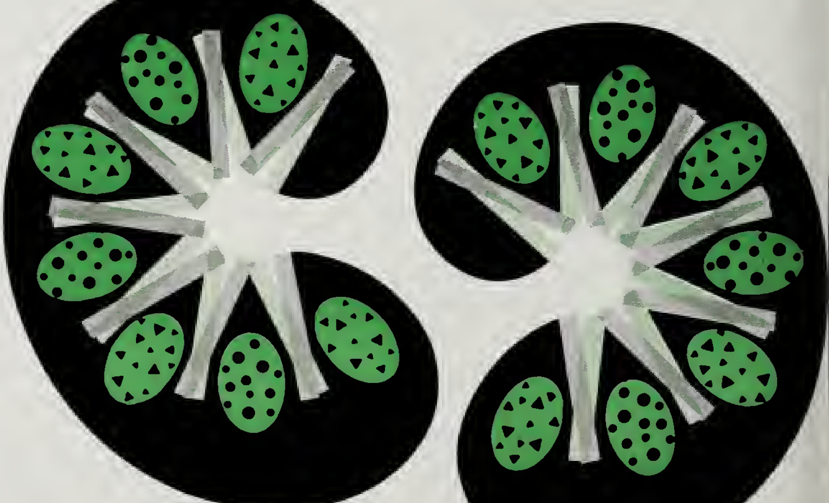

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recommended to the Board "that children abandoned in hospitals in D. C. should not be boarded in these hospitals, thereby taking up valuable bed space; but instead should be brought under a Welfare Department program which would permit such children being placed in foster homes with payment made through District funds." This recommendation was approved in a revised form:

"That children abandoned at hospitals in the District of Columbia should not be boarded in these hospitals, since this not only takes up valuable bed space but adversely affects the health and development of the children; and instead, should be brought under a Welfare Department program which would permit such children being placed in foster homes with payment made through District funds."

This Committee has considered at length the present status of the law in D. C. regarding abused children and the methods of handling this problem by the authorities. Mrs. Zenobia Hart, of the Juvenile Court, outlined the present program in detail. The Committee voted to request that the Executive Board give its authority to pursue a program designed to bring about the passage of proper legislation regarding abused children. This request was approved by the Board.

Committee on Cancer Control: Representatives of the D. C. Cancer Society appeared before the Committee, December 14, and outlined a proposed pelvic examination project which would include a "Pap" smear. This would be an educational program designed to induce women to secure pelvic examinations regularly. The Committee approved the proposal of the Cancer Society and recommended to the Board that the Society endorse this project and appoint a subcommittee to aid in the organization and implementation of such a program, to be sponsored jointly by the Medical Society and the Cancer Society. The Board approved the recommendation of the Committee, and the President was authorized to select a committee for these purposes and to offer speakers from the Medical Society in conducting such an educational program.

Medical Bureau Committee: Three physicians in one office had requested the Committee that they be billed at a single rate because only one physician is on call at any one time. The Committee stated that this situation had been studied in the past, and it was the opinion of the Committee that the volume of work necessitated on the part of the MEDICAL BUREAU is increased with each physician served and that each physician should be required to pay as an individual subscriber. The Board supported the position taken by the Committee.

Ad Hoc Committee on Rheumatic Fever: The Secretary reported that this Committee had met and was presently seeking additional information in reference to the Health Department's request for a grant for such a registry. The Board agreed that this matter should be referred to the Public Health Liaison Committee.

Committee on Medical Care: This Committee reported that it had completed its work on the revised Relative Value Scale and, having submitted a letter to Dr. Alfaro, immediate Past Chairman of the Board, outlining the work of the Committee, asked that it be dissolved. The report was accepted and the Board expressed its appreciation to the Committee for the long hours of work the members had put into this project.

It was agreed to refer the report of the Committee to the new Committee on Study of the Relative Value Scale for clarification of the recommendation in reference to Medical Service.

Kidney Disease Program: Dr. Philip L. Calcagno submitted a long and detailed prospectus for a Kidney Disease Program to be sponsored by the U. S. Public Health Service and Georgetown University. The program is designed primarily to establish a diagnostic center for indigent patients, although private physicians may utilize it if they so desire. No form of therapy will be undertaken. Any studies done for private patients will be summarized and the data sent to the referring physician. The program has been officially approved by the National Kidney Disease Foundation and the reaction of the Society was desired. The Board voted to refer the program to the Committee on Child Welfare for more detailed information and for its recommendation to the Board.

Committee on Public Health: At its last meeting this Committee considered the President's War on Poverty Program and noted that any reference to health seems to have been omitted from public statements on the Program. The Committee therefore recommended that the Executive Board communicate with the Director of the United Planning Organization and request that physician representation be added or that an advisory committee of physicians be established to assure that health is given proper attention.

New Committees: Dr. Wilner presented an outline of the new Council and Committee structure together with the committee personnel selected to date. It was suggested that a Cancer Committee and a Hospital Utilization Committee be added. The outline and the nominations made by President Wilner were approved.

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Encyclopaedia Britannica, Inc. Group Sales Plan: A proposal for Encyclopaedia Britannica to make available the latest edition of its 24-volume Britannica at a reduced rate to members of the Society and employees was not approved.

Metropolitan Area Medical Council Meeting: An oral report was presented by Dr. Nicklas on the last meeting of the Council. The report was accepted.

State Mental Health Planning Conference: The Board agreed to request Dr. Leon Yochelson, Chairman of the Committee on Mental Health, to represent the Society at this Conference, sponsored by the American Psychiatric Association, to be held at the Sheraton Park Hotel, in Washington, February 19–20, 1965.

Congress on Environmental Health Problems: The Board agreed to request Dr. Harold Hobart to represent the Society at the Second Annual Congress on Environmental Problems, sponsored by the American Medical Association, to be held, April 26–27, at the Drake Hotel in Chicago.

Annual Scientific Assembly: The Secretary reported that because of the popularity of the new Washington Hilton Hotel, the only suitable dates appear to be November 22, 23 and 24. The Program Committee has accepted these dates, with the ASSEMBLY to end with a luncheon on the 24th. The Board approved these dates.

Change in Meeting Time: A number of suggestions had been made to change the time and day for the meetings of the Board. On a trial basis it was voted that the meeting be moved up from 7:30 p.m. to 6:00 p.m., with a buffet dinner to be served in the library. The next meeting will be held on February 15, at which time a permanent time and date will be decided upon.

There being no further business, the meeting was adjourned.

Meetings

The Medical and Chirurgical Faculty of the State of Maryland will hold its **167th Annual Meeting** on April 21, 22, and 23 at The Alcazar in Baltimore. All physicians are invited to attend. There will be no registration fee. Credits for attending will be given by the American Academy of General Practice.

An excellent program has been planned with many prominent speakers. Dr. Howard A. Patterson, of New York City, President-elect of the American College of Surgeons, will be the opening speaker on Wednesday afternoon, April 21. The same afternoon Dr. Franklin T. Brayer, of Georgetown University, will discuss "The Population Explosion."

Among the speakers on Thursday will be Dr. Carl Muschenheim, of Cornell University, and Dr. Richard W. TeLinde, of Johns Hopkins University. A reception and the annual Presidential Dinner will be held in the evening.

Dr. John H. Talbott, Editor of *The Journal of the American Medical Association*, will be one of the speakers on Friday morning. His subject will be "Gout." Dr. Thomas W. Mattingly, of the Washington Hospital Center, another Friday speaker, will present a paper on "Effect of Aging on Diagnosis and Treatment of Heart Disease."

A complete program may be secured from Dr. Richard T. Shackelford, Chairman, Committee on Program and Arrangements, Medical and Chirurgical Faculty, 1211 Cathedral Street, Baltimore, Md. 21201.

The Washington Psychiatric Society will meet in the Medical Society's auditorium on Friday, April 23, at 8:30 p.m. Dr. William Caudill, of the National Institute of Mental Health, will be present to speak on "Child Rearing in Japan and Its Influence on Character Structure."

The Joint Meeting of the Washington Society of Pathologists, the Southeastern Region of the College of American Pathologists, and the Pathology Section of the Baltimore City Medical Society will be held on May 15 in Dart Auditorium at the Armed Forces Institute of Pathology. There will be a social hour at the Sheraton Silver Spring Motor Inn in the evening.

A seminar on "Diagnostic Problems in Neuropathology" will be conducted by Dr. Kenneth Earle, Chief of the Neuropathology Branch, AFIP. The cases chosen for this seminar represent difficult diagnostic problems of the type that are sent for consultation. Most of the cases are non-neoplastic or represent a problem in differentiating between neoplasms and reactive changes.

Sets of slides and clinical histories may be obtained by mailing a check or money order in the amount of $15.00 to Dr. Abner Golden, Secretary-Treasurer, Washington Society of Pathologists, Georgetown University Hospital, 3900 Reservoir Road, N. W., Washington, D. C. 20007.

A limited number of sets have been prepared and none will be available when this supply is exhausted. A short syllabus on removal, sectioning, fixing and staining of the brain has been prepared by Dr. Earle, and will be sent with each set of slides that are purchased. A summary of the discussion of each case with references will be sent to participants after the seminar is completed.

A Postgraduate Course in Pediatrics entitled "Surgical Decisions for the Pediatrician" will be presented, May 19, 20 and 21, 1965 at the Children's Hospital in Washington, D. C.

Specialists in various fields related to pediatrics will be present to discuss surgical questions which the pediatrician faces daily. They will include Dr. Arnold Salzberg of Richmond (surgery); Dr. Frank D. Costenbader, Washington (ophthalmology); Dr. Paul Griffin, Boston (orthopedics); Dr. Guy Leadbetter, also from Boston (urology); Dr. George Harkins, Norfolk (surgery); Dr. Robert Filler of Walter Reed General Hospital (trauma); Dr. Blair M. Webb, Washington (otolaryngology); Dr. Frank Spencer of Lexington, Kentucky (cardiac surgery); and Dr. Judson Randolph, Washington (surgery).

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General News

Federal funds of more than $3 million will be provided for **facilities for the mentally retarded** at Johns Hopkins University Medical Center, in Baltimore, and the Georgetown University Medical Center, in Washington. These grants are the first to be approved under the program of Federal assistance for the construction of university-affiliated facilities for the mentally retarded established by P.L. 88-164.

The Children's Rehabilitation Institute at Reisterstown, Md., an affiliate of Johns Hopkins, will receive $2,360,250. The new facility, to be known as the John F. Kennedy Institute, will be located at the Johns Hopkins University Medical School. It will serve as a training site for specialists engaged in caring for the mentally retarded.

Georgetown University, which will be awarded $1,500,000 in grants, plans to build a $2 million facility which will include such services as complete diagnostic evaluations, management and rehabilitation of the mentally retarded, and specialized training of medical, paramedical, and nonmedical personnel.

An agreement to set up a mental retardation outpatient facility for children of military personnel was signed on January 11 by representatives of the Medical Department of the Navy and the Public Health Service of HEW. The facility, to be called the Diagnostic and Study Unit, will be located on the grounds of the National Naval Medical Center. Children and families studied at the Unit will be those ordinarily eligible to receive medical services at the Naval Hospital and will be referred to the Unit by the Navy Hospital's Pediatric Service.

Short-term grants for research in medical education are now available from the American Heart Association for physicians who may wish to analyze specific problems in this area but cannot devote a full academic year to the project. They are designed especially for physicians who wish to spend perhaps 2 months in a department of medical education in order to learn techniques for analyzing specific problems which may have arisen at their institutions. Two short-term grants, each carrying a $2,500 stipend, will be awarded yearly. Application forms are available from the Director of Medical Education, American Heart Association, 44 East 23rd Street, New York, N. Y. 10010.

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Indications: 'Miltrate' is useful for prophylaxis of pain in angina pectoris, especially where accompanied or intensified by anxiety. **Contraindications:** Like all nitrates, pentaerythritol tetranitrate should be avoided or prescribed cautiously for patients with glaucoma. Previous allergic or idiosyncratic reactions to meprobamate contraindicate subsequent use. **Precautions:** *Meprobamate* — Careful supervision of dose and amounts prescribed is advised. Consider possibility of dependence, particularly in patients with history of drug or alcohol addiction; withdraw gradually after use for weeks or months at excessive dosage. Abrupt withdrawal may precipitate recurrence of pre-existing symptoms, or withdrawal reactions including, rarely, epileptiform seizures. Should meprobamate cause drowsiness or visual disturbances, the dose should be reduced and operation of motor vehicles or machinery or other activity requiring alertness should be avoided if these symptoms are present. Effects of excessive alcohol may possibly be increased by meprobamate. Grand mal seizures may be precipitated in persons suffering from both grand and petit mal. Prescribe cautiously and in small quantities to patients with suicidal tendencies. **Side effects:** Side effects of 'Miltrate' administration have been few, consisting of headache, nausea, sleepiness and insomnia, and dizziness. *Pentaerythritol tetranitrate*—The most common side effects are transient headache, nausea, and rash. Weakness, palpitation, flushing, gastrointestinal distress, and lightheadedness have been reported on a few occasions. *Meprobamate*—Drowsiness may occur and, rarely, ataxia, usually controlled by decreasing the dose. Allergic or idiosyncratic reactions are rare, generally developing after one to four doses. Mild reactions are characterized by an urticarial or erythematous, maculopapular rash. Acute nonthrombocytopenic purpura with peripheral edema and fever, transient leukopenia, and a single case of fatal bullous dermatitis after administration of meprobamate and prednisolone have been reported. More severe and very rare cases of hypersensitivity may produce fever, chills, fainting spells, angioneurotic edema, bronchial spasms, hypotensive crises (1 fatal case), anuria, anaphylaxis, stomatitis and proctitis. Treatment should be symptomatic in such cases, and the drug should not be reinstituted. Isolated cases of agranulocytosis, thrombocytopenic purpura, and a single fatal instance of aplastic anemia have been reported, but only when other drugs known to elicit these conditions were given concomitantly. Fast EEG activity has been reported, usually after excessive meprobamate dosage. Suicidal attempts may produce lethargy, stupor, ataxia, coma, shock, vasomotor and respiratory collapse. **Dosage:** Usual dosage is one or two tablets before meals and at bedtime. Individualization of dosage is required for maximum therapeutic effect. Doses above 12 tablets daily are not recommended. (Note: When titration of the doses of the individual components of 'Miltrate' is desired, meprobamate is available as 'Miltown' [meprobamate] tablets and 'Meprospan' [meprobamate, sustained release] capsules.) **Supplied:** White tablets, each containing meprobamate 200 mg. and pentaerythritol tetranitrate 10 mg. ***Before prescribing, consult package circular.***

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Nursing fees for members of the Private Duty Section of the Graduate Nurses' Association were increased from $22.00 to $24.00 for 8-hour duty, beginning January 15, 1965. The increase in fees was found necessary to enable the nurse in private practice to meet living costs, improve her professional education, and to maintain her standard of living as a professional person.

Heading the **Medical Staff of Sibley Memorial Hospital** for 1965 are: Dr. A. Magruder MacDonald, President; Dr. Richard H. Spire, Vice President; and Dr. George H. McLain, Secretary.

All three men have had long association with the Sibley medical staff. Dr. MacDonald's service at Sibley dates back some 40 years, when he was one of the original members of the Medical Council which preceded the present medical staff. Dr. Spire, who succeeds himself in the vice presidential position, interned at Sibley over 25 years ago, and Dr. McLain served both his internship and residency at Sibley about 30 years ago.

The Senior Attending Physicians of Children's Hospital reëlected Dr. Milton M. Greenberg Chairman of its Medical Staff for 1965; Dr. Gerald H. McAteer was reëlected Vice Chairman. Dr. Harold M. Hobart is the new Secretary-Treasurer.

Dr. Stephen J. Sheehy, Jr. has been elected President of the **Medical Staff of Arlington Hospital.** Dr. Harry C. Bates, Jr. was elected Vice President and Dr. Gerald J. Fisher, Secretary. Dr. Sheehy and Bates are Associate members of the D. C. Medical Society.

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The Arlington County (Virginia) Medical Society has elected the following officers for 1965:

Dr. Sydney A. Tyroler, *President;* Dr. John J. Nolan, *President-elect;* Dr. Gerald J. Fisher, *Vice President;* and Dr. Robert E. Byrne, *Secretary.*

Drs. Nolan and Byrne are Associate members of the D. C. Medical Society.

Mr. H. Doyl Taylor, formerly City Editor of the Des Moines (Iowa) *Tribune,* has been appointed **Director of the AMA's Department of Investigation.** Mr. Oliver F. Field, who has been with the Department of Investigation for 15 years, will continue his activities as director of the research program.

Seton Hall Medical School in Jersey City, N. J. was taken over by the state on January 1, following approval of the proposal by the New Jersey State Legislature. The Roman Catholic Archdiocese of Newark, which established the School in 1956, will be reimbursed in the amount of 4 million dollars. The School, to be **renamed the New Jersey College of Medicine and Dentistry,** has an enrollment of some 300 and awards about 75 degrees in medicine annually.

The New Jersey Legislature has also passed a bill providing state funds for the **new Rutgers Medical School,** which is scheduled to admit its first class in 1966.

"Occupational Diseases, A Guide to Their Recognition," a reference book to aid physicians and allied professional personnel in the detection and control of job-related illnesses, has been released by the Division of Occupational Health of the U. S. Public Health Service. The publication contains a listing of sources of consultation on occupational health and industrial hygiene prob-

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lems and a basic reference list. It is available for $2.25 from the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20025.

Help for Retarded Children, Inc. has moved into its new quarters at 405 Riggs Road, N.E. The agency was formerly located at 3705 Benning Road, N.E.

Personals

Dr. Clayton B. Ethridge has been appointed Medical Director of the George Washington University Hospital and an Associate Dean of the School of Medicine. The appointment was made by Acting President of the University O. S. Colclough.

Dr. Ethridge, new Medical Director of George Washington Hospital

Dr. Ethridge has served on the faculty of the School of Medicine for 28 years and is presently Professor of Medicine. He is Past President of both the D. C. Society of Internal Medicine and the Washington Heart Association and is a member of many other professional and civic organizations. Among his awards and honors are the Certificate of Merit and Selective Service Medal presented by President Truman in 1945 and the Meritorious Service Award presented by the Federal Aviation Agency in 1964 for his services as Chairman of the Medical Advisory Panel over a 3-year period.

Five Sections of the Southern Medical Association have elected officers which include members of the D. C. Medical Society. **Dr. Frank J. Schaffer,** of Silver Spring, Md., is the new Chairman of the Section on Physical Medicine and Rehabilitation. Dr. Schaffer is an Associate member of the D. C. Medical Society.

Dr. George P. Blundell is Vice Chairman of the Section on Pathology.

Chairman-elect of the Section on Obstetrics is **Dr. James G. Sites.**

Dr. William F. Sheeley was elected Secretary of the Section on Neurology and Psychiatry. Anyone wishing to participate in the program of this Section at the 59th Annual Meeting of SMA, which will be held in Houston, Texas, November 1–4, should contact Dr. Sheeley.

The Section on Ophthalmology elected **Dr. William J. G. Davis** a member-at-large.

Dr. Lawrence J. Thomas has been elected President of the Medical Students' Aid Society, which is a nonprofit, philanthropic arm of Phi Lambda Kappa medical fraternity. The Society was founded in 1949 for the purpose of advancing medical education and science by providing tuition loans to medical students, loans to young physicians, scholarships, housing aid and awards for professional achievement.

Dr. Oscar B. Hunter, Jr. is the new President of the Merrick Boys Camp, a nonprofit organization which provides free summer vacations for deserving boys in the Washington Metropolitan Area.

Dr. Everett J. Gordon was recently reappointed Chairman of the Medical Committee of the Boys Clubs of the Metropolitan Police of D. C. Dr. Gordon has been serving in this capacity since 1950, when he succeeded his brother, the late Dr. Leon S. Gordon, who had served as Medical Chairman since the inception of the Club in 1936.

Dr. John R. Cavanagh, who is presently in Rome, Italy, was named one of the recipients of the Papal Benemerenti Medals, awarded by Pope Paul VI, in recognition of more than 25 years of "faithful service" to Catholic University. The medals were presented by the Rector, the Most Reverend William J. McDonald, at a reception for the faculty, January 14.

Among 42 radiologists who were elected to fellowship in the American College of Radiology at its Annual Meeting in Philadelphia, February 9–13 were **Drs. Charlotte P. Donlan, Uthai V. Wilcox II, James E. Wissler, and Alvin C. Wyman.**

Dr. Seymour Alpert has been elected President of the United Jewish Appeal of Greater Washington. During the past 2 years he has served as General Campaign Chairman of the Appeal.

Dr. Herbert S. Gates, Jr. is a new Fellow of the American College of Obstetricians and Gynecologists.

Dr. Gerald I. Shugoll, of Mt. Alto Veterans Administration Hospital, an Associate member of the D. C. Medical Society, was elected a Fellow of the American College of Physicians on November 7.

Invasive Squamous-cell Carcinoma of Vagina—Cromer

(*Continued from page 117*)

light of this knowledge are clear-cut. Once a patient has been treated for carcinoma in situ of the cervix she must remain under constant care for the remainder of her life. Periodic Papanicoloau smears and biopsies of Schiller positive areas in the vagina are imperative if the development of invasive cancer is to be forestalled. Once invasive carcinoma is present the entire picture is seriously altered. The patient's life is in jeopardy, the surgical management hazardous and difficult, and a successful outcome for the patient doubtful. Preinvasive cancer of the cervix is a serious disease and worthy of great respect. The gynecologist faced with the care of the patient with Stage 0 cancer of the cervix should be ever mindful of the awesome potentialities of disaster for the patient inherent in this disease.

Summary

Three cases of invasive squamous cell carcinoma of the vaginal vault arising after long intervals following surgery for Stage 0 carcinoma of the cervix have been presented. The careful follow-up of all treated patients with Stage 0 cancer of the cervix by Papanicolaou smears and biopsies of Schiller positive areas of the vagina for the remainder of their life has been emphasized.

References

1. Graham, J. D., in Meigs, J. V., editor: Surgical Treatment of Cancer of the Cervix. New York: Grune, 1954, p. 423.
2. Carter, B., and others: Clinical problems in stage 0 (intraepithelial) cancer of cervix. Amer. J. Obstet. Gynec., 1956, **71**, 634.
3. Funnell, J. D., and Merrill, J. A.: Recurrence after treatment of carcinoma in situ of cervix. Surg. Gynec. Obstet., 1963, **117**, 15.
4. Newman, W., and Cromer, J. K.: Multicentric origin of carcinomas of female anogenital tract. Ibid., 1959, **108**, 273.

"My Feet Are Killing Me"—Peterson

(*Continued from page 121*)

tive bleeding may occur, but the initial dressing is usually continued until the sutures are removed. A tourniquet is often used and is applied at the level of the ankle except when tendon transfers are performed. In the more advanced age group it is preferable to operate without a tourniquet except when the procedure is extensive, and then operating time should be kept to a minimum. Postoperatively there is swelling of the operated part for a period of several months, and the patient should be prepared for this event. After the swelling has subsided and rehabilitation is complete the patient who has undergone foot surgery will usually be pleased with the result.

Reference

1. Joplin, R. J.: Sling procedure for correction of splayfoot metatarsus primus varus, and hallux valgus. J. Bone Joint Surg., 1950, **32-A**, 779.

Surgery at Doctors Hospital—Morris

(*Continued from page 124*)

54,874 patients. There were 57,174 operations with 910 deaths, a mortality rate of 1.5 per cent. The operative mortality of the other divisions of Surgery is listed in table 1.

Reference to figure 3 shows the infection rate in 3,554 direct and indirect inguinal hernia operations. This varied from zero to 1.4 per cent, the highest figure exceeding the total postoperative infection rate in only 1 year. The infection rate for the surgical service has averaged 0.4 per cent, shown graphically in figure 3 as "less than 1 per cent in an effort to compensate for any errors in the records, failure to report the infection, the lack of culture in suspicious wounds, etc."

This report contains only meager representation of the total Doctors Hospital profile. Its dynamic facilities and services, used by 267,373 patients since 1940, have greatly served this rapidly growing metropolitan area.

I am grateful for the many hours of work dedicated to the preparation of tables, statistics, and charts by Miss Charlotte Hohlt, Chief Record Librarian; to the Surgical Council and staff under the direction of Dr. Harry Lee Claud; to Dr. Edgar A. Bocock, Administrator; and to Miss Beatrice Heiman for editing and bibliographic materials. Dr. Charles Stanley White, Sr. offered many helpful suggestions, and his book, entitled "Surgical Interlude," aided in the recollection of historic events.

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1. Welch, C. E., Diverticula of the Alimentary Tract, in Conn, H. (editor): Current Therapy—1961, Philadelphia, W. B. Saunders Company, 1961, pp. 224-225.

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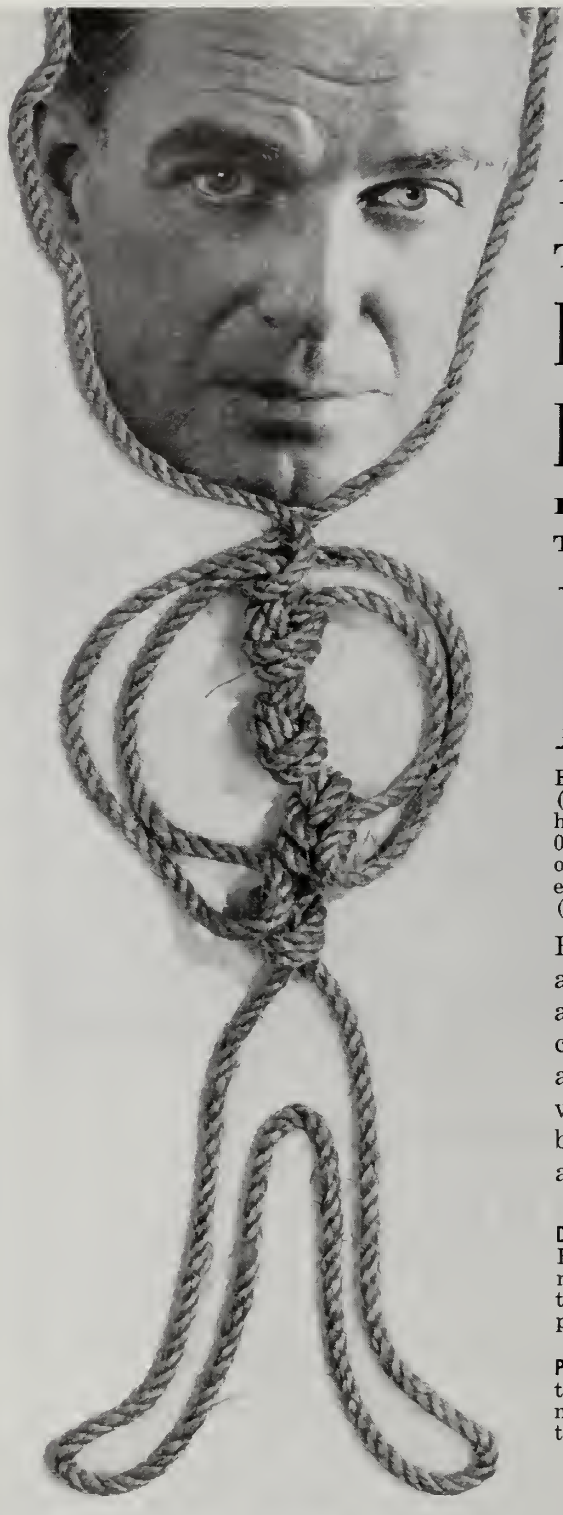

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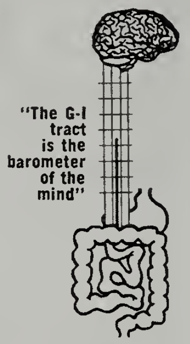
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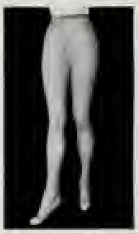

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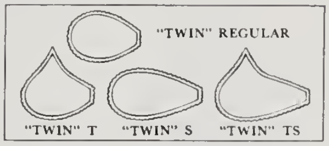

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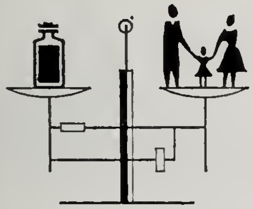

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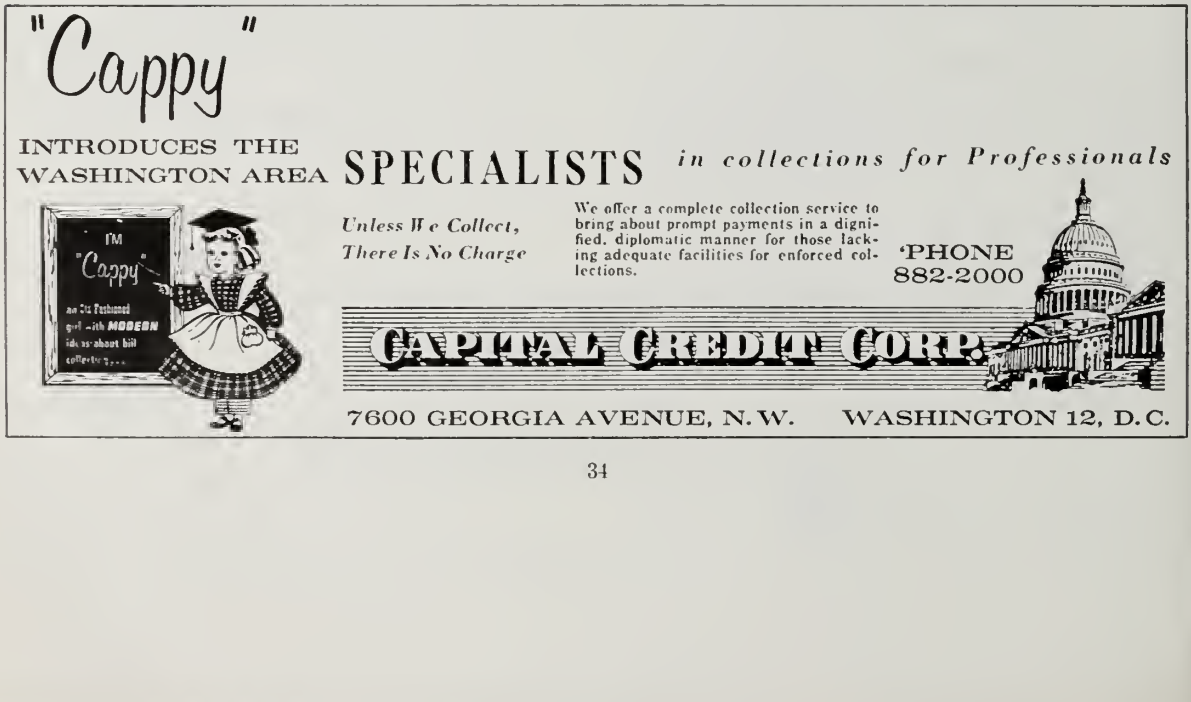
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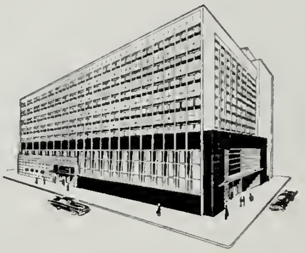

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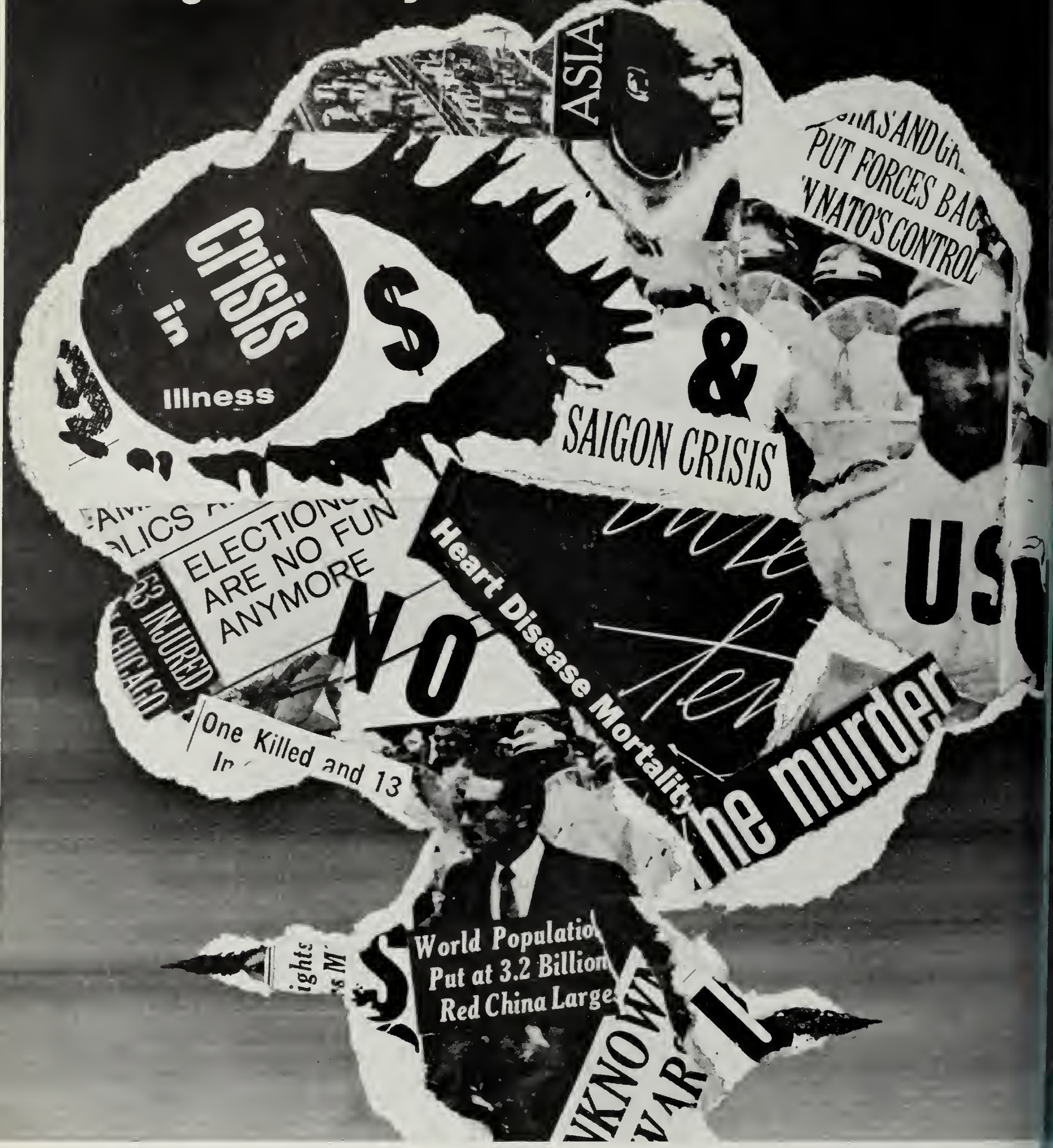
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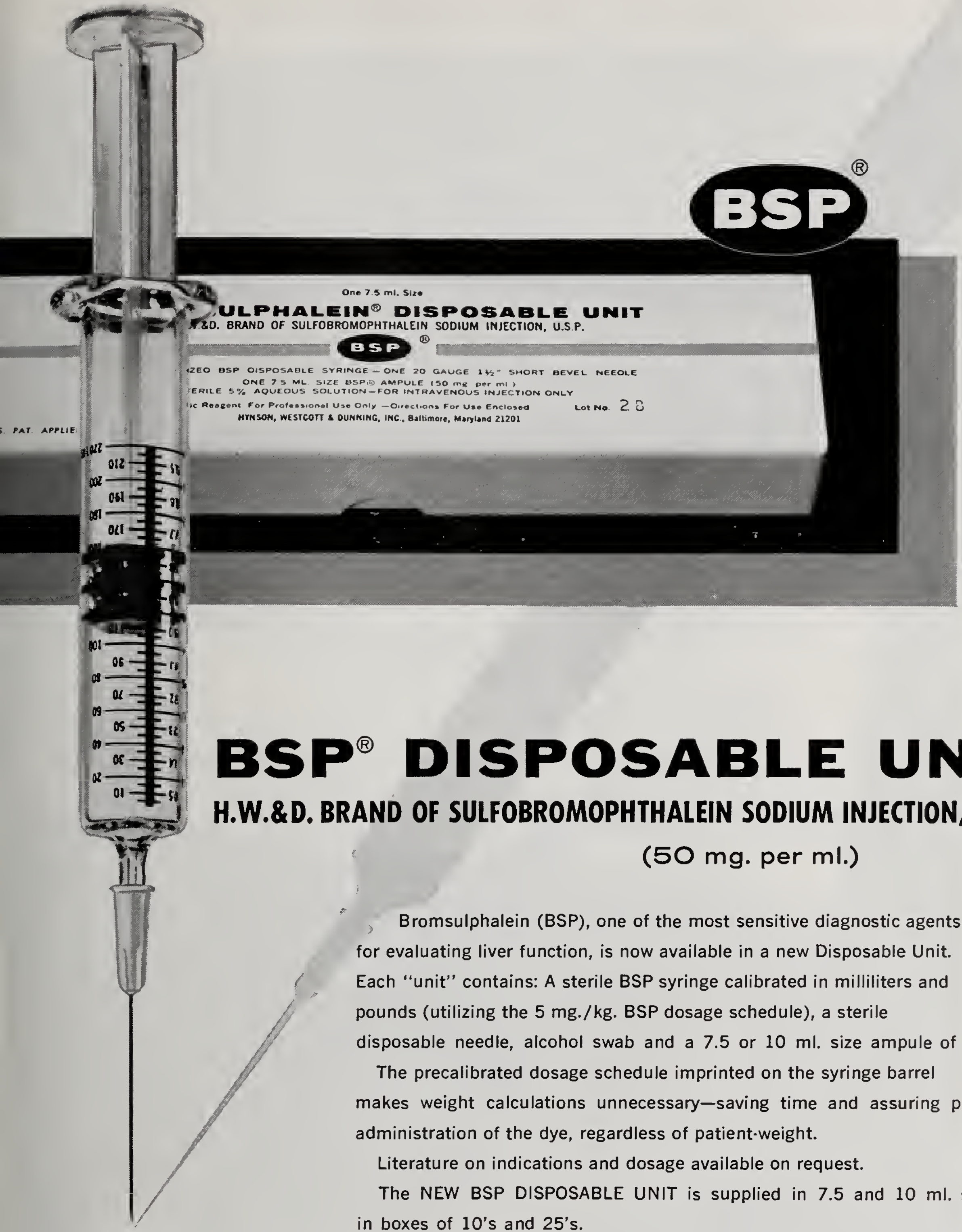

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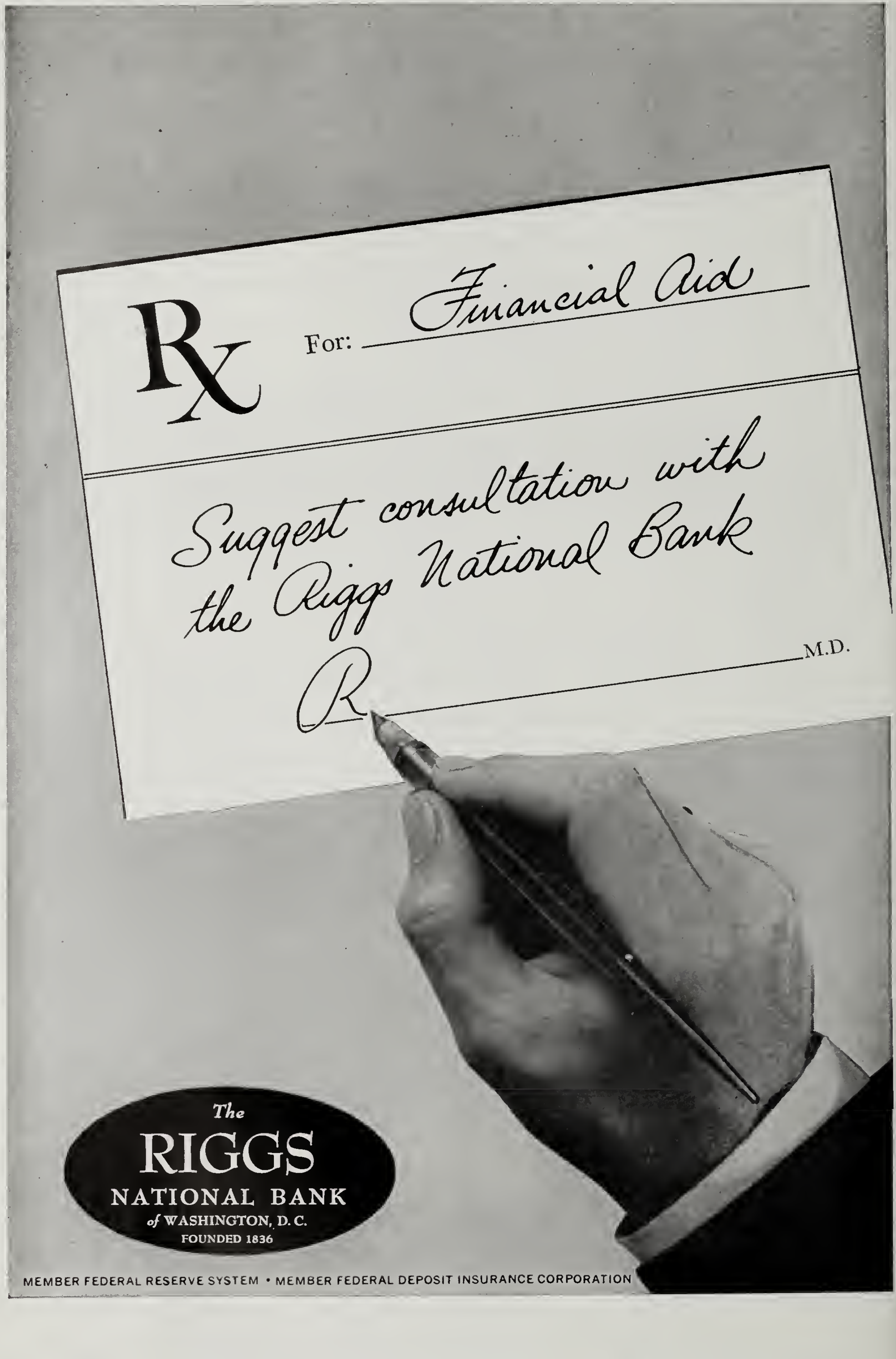
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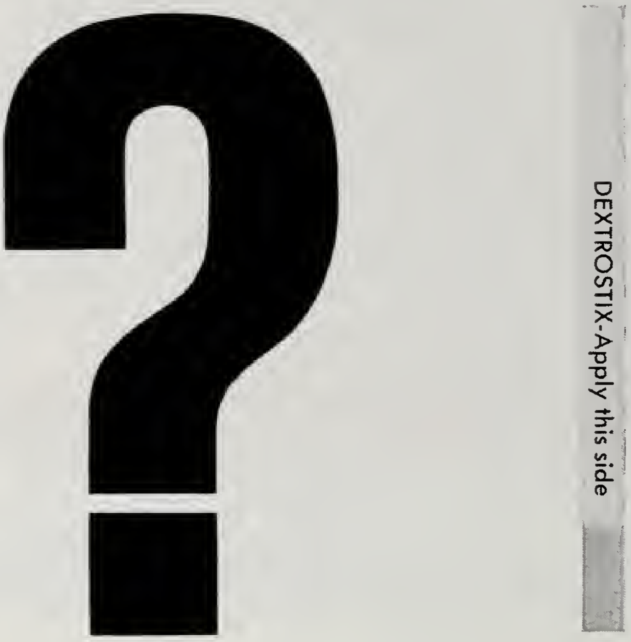

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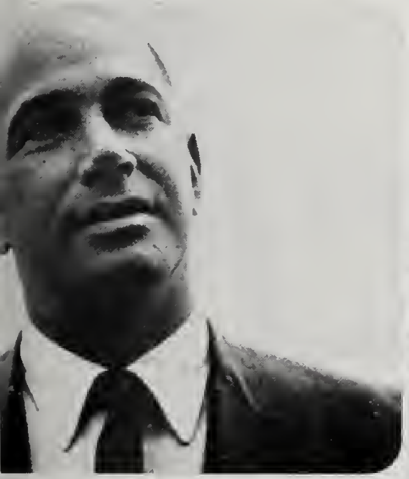

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*Chupkovich, V.; Finnerty, F. A., Jr., and Kakaviatos, N.: The value of chlorthalidone plus reserpine in moderately severe and severe hypertension: A two year study. Presented at the 7th Inter-American Congress of Cardiology, Montreal, June 14–19, 1964.

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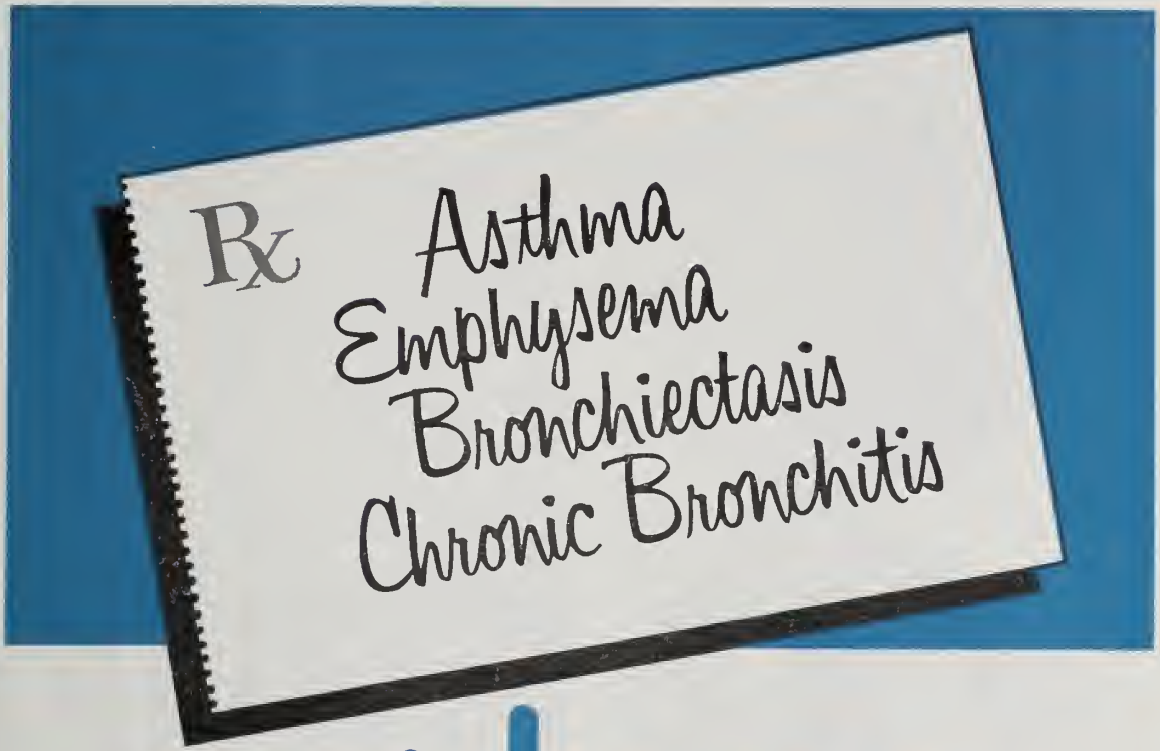

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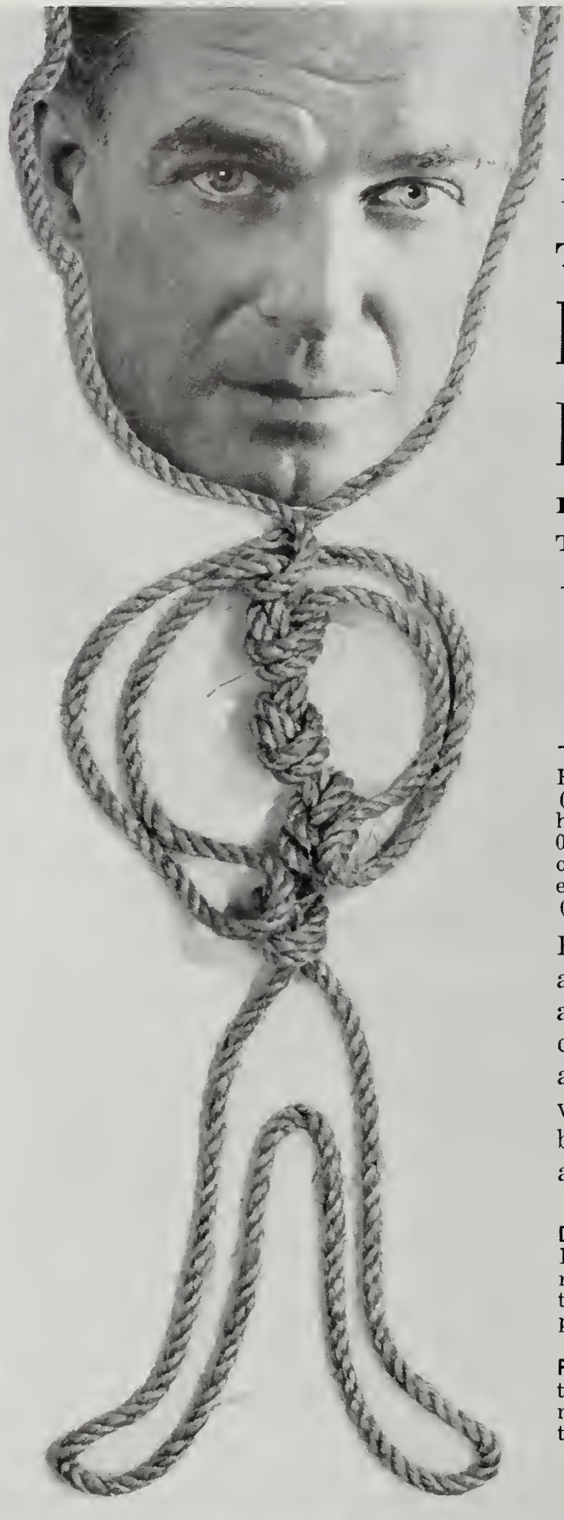

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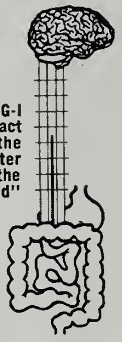

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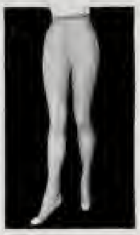

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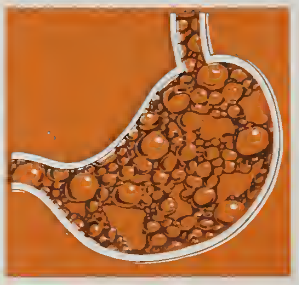

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BOOK REVIEWS

Current Practice in Orthopaedic Surgery, volume 2. John P. Adams, B.S., M.D., F.A.C.S., Editor, and 13 Contributors. Price, $13.50. Pp. 231, with 126 illustrations. St. Louis: Mosby, 1964.

The second volume consists of 219 pages plus an index, divided into 3 sections—divided for easy reference into an excellent format with large clear type, prominent, bold subheadings, and good quality illustrations.

The book consists of a series of full length articles on various aspects of Orthopaedic Surgery, including surgery of the hand, trauma, and biological and clinical investigations.

The first section contains 2 articles, the first an excellent review of various methods of tendon transfers for nerve paralysis of the hand and wrist, and the second a discussion of tests for determining the sensibility of the hand. The second chapter contains full length articles on fractures and dislocations of the thoracic and lumbar spines, management of acute vascular injuries of the extremities, fractures and dislocations of the elbow in children, treatment of injuries of the proximal and interphalangeal joints of the fingers, and fractures of the humeral shaft.

In the miscellaneous third chapter, one article describes the psychologic characteristics associated with acute and chronic orthopaedic disabilities, explaining some of the neurotic factors associated with refractory cases. The second article in this section, entitled "Comparative Biology of Mineral Deposition," is a very detailed review of mammalian bone calcium metabolism as compared with other phyla and invertebrate groups. The material appears overly sophisticated for the average orthopaedist, but of value to a research scientist. Inasmuch as this article requires 41 pages of the volume, it would appear preferable to confine such material to either a shorter length presentation or to research of more interest to the average orthopaedic surgeon.

The articles are well chosen and written by acknowledged experts in their respective fields. There has been no attempt to completely review all advances in orthopaedic surgery and related subjects in this one volume. The format is entirely different from the Yearbook of Orthopaedic Surgery which briefly summarizes most of the important orthopaedic articles during the previous year. Instead, the editor presents a survey of several selected subjects in various phases of orthopaedic surgery. It forms an excellent companion to the Yearbook and should prove of increasing value as the succeeding volumes are issued.

Everett J. Gordon, M.D.

Dynamic Pathology. Structural and Functional Mechanisms of Disease. Maurice M. Black, M.D., and Bernard M. Wagner, M.D. Price, $8.00. Pp. 296, with 34 figures. St. Louis: Mosby, 1964.

Drs. Black and Wagner have presented a truly provocative and stimulating aspect to traditional pathology and light microscopy and must be congratulated on their efforts! Although the book has many points of brilliance, and possibly genius, it is almost impossible to digest it without multiple readings. Much of the indigestion is due to involved, exceptionally difficult paragraph-sentences and to an ultrastructural vocabulary that presumes much prior knowledge on the part of the reader. In other areas, contrariwise, the text flows in beautiful English, studded with philosophic gems, and presents probing thoughtful premises in pathologic physiology.

The purpose of the book is to present the dynamics of disease processes as are understood by classical clinicopathologic methods correlated with the ultrastructural, biochemical and genetic methodologies which have been developed in the past decade. This has been accomplished admirably. The text includes chapters on the general properties of cells; their subcellular organization and alteration in disease; the influence of genetics on cellular differentiation; and abnormalities in vascular, reticuloendothelial, endocrine, hepatorenal and connective tissue homeostatic mechanisms. It also includes the basic principles of neoplasia, radiation, deficiency, and infectious diseases, and their effects on such homeostatic mechanisms.

Many thoughtful and original concepts are offered throughout the text. The lymphoreticuloendothelial system and its relation to the immune processes are particularly well presented. The bibliography has been selected with much discrimination and in some chapters is implemented by choice comments by the authors.

This book can be recommended most highly to all those interested in the mechanisms of disease who are not offended by new concepts and who have the time to read and reread it.

Mary J. Matthews, M.D.

Stereoscopic Manual of the Ocular Fundus in Local and Systemic Disease. Frederick C. Blodi, M.D., and Lee Allen. Price, $32.50. Pp. 132, with 6 line drawings, 95 photomicrographs, 105 stereoscopic views in full color on 15 View-Master® reels, and a View-Master® compact viewer. St. Louis: Mosby, 1964.

Since the invention of the ophthalmoscope in 1850, more than 100 atlases of ophthalmoscopy have been published. Blodi and Allen have made a significant new contribution to this list with a magnificent collection of stereoscopic views of the ocular fundus.

Using the Zeiss fundus camera and a method of cornea-induced parallax, the authors have compiled a collection of 105 stereophotographs of common, and not-so-common, fundus diseases. The advantages of these 3 dimensional views over the flat illustrations we are more accustomed to is immediately appreciated when seen. Even in a tissue as thin as the retina, localization of lesions as to depth is readily apparent.

While the authors, of course, do not include every

(Continued on page 24)

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Book Reviews

(*Continued from page 22*)

conceivable type of fundus lesion, they do an admirable job in covering the broad field of diseases that are most likely to be encountered by practicing physicians. The material is divided into 15 reels of 7 views per reel. Included are views of the normal retina, congenital and developmental anomalies, diseases of the optic nerve, macula, retina, choroid and vitreous, chorioretinitis, intraocular tumors, and retinal detachments. Particular emphasis is placed on the retinal manifestations of systemic diseases. Of timely interest are the photographs of drug-induced retinopathies.

Each view is accompanied by a brief description of the clinical and pathologic features of the case in point. Also included in the text are numerous photomicrographs correlating the clinical features of the lesion with its microscopic appearance. These are invaluable in giving us a clearer understanding of what we are seeing in vivo.

Study of these stereophotographs has great value both to the neophyte who is just being introduced to ophthalmoscopy and to the more experienced ophthalmoscopist, affording him the opportunity of studying details of fundus pathology at leisure, under magnification and depth not usually available in a clinical situation. A well constructed index adds materially to the teaching value of the work. This manual should be available to everyone who uses the ophthalmoscope.

Harold I. Rodman, M.D.

Report of the Commission on Drug Safety. Price, $5.00. Pp. 228. Washington, D. C.: Federation of American Societies for Experimental Biology, 1964.

This is the official and final report of the Commission on Drug Safety, which was established in 1962 by the Pharmaceutical Manufacturers' Association for the purpose of exploring in depth the many aspects of drug safety and for making constructive recommendations. Dr. Lowell T. Coggeshall, Vice President of the University of Chicago, was appointed Chairman and he chose the following members who then formed and became chairmen of the 17 subcommittees: Physicians—Drs. Paul Cannon, Thomas Francis, Jr., Philip Hench, Hugh Hussey, Jr., Chester Keefer, Theodore Klumpp, John Litchfield, Jr., Maurice Nance, Leonard Scheele, Austin Smith, Thomas Turner, Josef Warkany; Leon Schmidt, Ph.D., and Duke Trexler, Executive Secretary. The Commission met weekly until 1964 when it published this final report and terminated its activities. Subsequently, HEW made possible, through a grant, the establishment of the Drug Research Board of the National Academy of Sciences-National Research Council to serve as a permanent study and advisory board for continuing questions of drug safety which require consideration by outside authorities in addition to that of Government agencies.

The contents are listed in order that potential readers may be aware of the vast subject range covered: I. Charter of the Commission. II. Members of the Commission. III. Report of the Commission: research, clinical pharmacology, medicine, the universities, the pharmaceutical industry, the Federal Government, the role of the public, perspective. IV. (Texts of) Reports of the Subcommittees: 1. Basic research-animal experiment, 2. Long-term chronic studies, 3. Teratology, 4. Acceptance of drugs for clinical trial, 5. Limited human trials, 6. Wider-scale trials on general basis, 7. Principles of institutional and investigator competence, 8. The position and status of the clinical pharmacologist, 9. Data collection, evaluation and retrieval, 10. Avenues for international communication, 11. Responsibility of the university, 12. Responsibility of medicine, 13. Responsibility of the pharmaceutical industry, 14. A representative advisory body on tests, 15. Responsibility of Government, 16. On state and Federal drug legislation, 17. Responsibility of the public. *Appendices:* A. Activities of the Commission on Drug Safety. B. Publications of the Commission on Drug Safety. C. Investigational-Use Drug Regulations. *Index.*

This is a worthwhile report as well as several books in search of an author. Its value lies in the fact that it is a compilation of ideas offered voluntarily by many of the best minds representing the medical profession, Government, industry, universities, and the public. It considers the subject of drug safety from the standpoint of what has been done, what should be done, what can be done, and by whom. It is a forecast of what is going to happen in the drug field over the next 20 years and for this reason belongs in every library. Proper editing and indexing would have been a blessing.

A. Earl Vivino, M.D., Ph.D.

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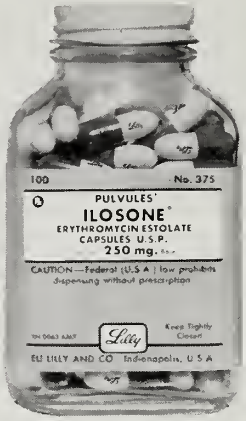
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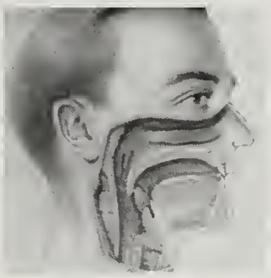

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April 1965 VOLUME XXXIV • NUMBER 4

Recent Advances in Psychosurgery*

WALTER FREEMAN, M.D., PH.D.

Sunnyvale, California

How to make psychosurgery both safe and effective has been my major preoccupation for nearly 30 years. To reach these goals long follow-up studies are essential. When Watts and I presented our first paper on the subject in 1936, Adolph Meyer[1] encouraged us and urged us to follow each case. My present trip to Washington is an extension of that effort.

Advances in psychosurgery can be considered under 2 main headings: (1) choice of patients, and (2) choice of surgical technics.

Choice of Patients

The choice of patients depends largely upon the goal sought. Since psychosurgery has been so strongly criticized, it behooves the proponents to realize that their failures will accumulate among the population of the public mental hospitals and that their successes will return to their former lives, freed from what Arnot[2] calls a fixed state of tortured self-concern and largely lost to view. The psychosurgeon, then, has the choice of rejecting unfavorable candidates and thereby gaining satisfactory results in some 75 to 85 per cent, or, on the other hand, of striving to improve the hospital adjustment of chronically ill schizophrenic patients with the expectation that some 40 per cent will be able to leave the mental hospital. The other 60 per cent will remain hospitalized, and almost inevitably their further deterioration will be blamed upon the operation rather than upon the natural course of the disease.

The indications and contraindications for lobotomy have been described many times over the past quarter century. Briefly, the positive indications consist of severe suffering, mental or physical, for which more conservative measures are ineffective. Among the clinical conditions most often benefited are depressive reactions, anxiety states, obsessive-compulsive neuroses, intractable pain, and psychosomatic disorders. Any psychosurgery is contraindicated in sociopathic, criminal, sexual psychopathic conditions, alcoholism and drug addiction. There is still a broad band of uncertainty in the schizophrenic disorders. Emotional deterioration is a contraindication, but in a given case it is sometimes difficult to distinguish between deterioration, which cannot be overcome, and regression, which may yield spectacular results. Watts and I[3] said in this connection that a deteriorated schizophrenic looks and acts the same with or without his frontal lobes. When the progress notes of such a patient read, "Gives no trouble on the ward," it is generally too late to expect any substantial result from operation. The duration of the schizophrenic disorder is of less importance in prognosis than is the duration of hospitalization.[4] Of patients operated upon before the first year of hospitalization 2 out of 3 can return to their homes. Between 1 and 2 years the chances are 50–50. After more than 2 years of hospitalization, not necessarily continuous, only 1 patient in 3 makes a successful adjustment outside the hospital. Yet we have seen occasional patients with 15 to more than 20 years of hospitalization who were able to adjust at home, often after a long period, even 10 years, of postoperative residence in the hospital. There are fewer of these patients who make belated improvements than there are of patients who do well for a year or 2 only to relapse into the same state that they exhibited preoperatively. Secondary operations are sometimes worth while but usually only in the non-schizophrenics.

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* Delivered before the Washington Academy of Neurosurgery in Washington, D. C., October 28, 1964.

Among the schizophrenic types there is a progressively poorer response, approximating the following figures:

Types of Schizophrenia	*Postoperative Improvement Per cent*
Pseudoneurotic	85
Atypical	75
Paranoid	60
Catatonic	50
Hebephrenic	30
Simple	20
Childhood	5

Psychosurgery generally yields poorer results in hypochondriacal, hysterical, and epileptic patients. The last form a group that is undergoing intensive study in several neurosurgical services. Many patients with temporal lobe epilepsy behave like disturbed schizophrenics, and effective surgery can restore them to useful existence. Depth electrography is particularly valuable in patients whose discharging foci cannot be accurately localized by scalp electroencephalography.

Results. Overall results of psychosurgery have been published in various countries. The largest series was collected by Tooth and Newton[5] dealing with 10,365 patients undergoing a single operation. Duration of illness averaged over 6 years, yet 46 per cent of the patients were discharged. Schizophrenics made up about 65 per cent of the patients operated upon. Recently another report from England[6] details results in 350 patients, mostly depressive, in which success was attained in over 80 per cent. These figures are close to my own experience,[7] contrasting private patients with those I was invited to operate upon at various state hospitals.

Surgical Technics

Standard and radical prefrontal lobotomies, as Watts and I described them in 1950, are too damaging to be employed in any but the most chronically and severely disturbed patients. In these, in the phrase of Burckhardt,[8] the grandfather of psychosurgery, the goal is to "change a disturbed dement into a quiet one." Even then, I believe, a selective operation should be done and the major operation performed only if relapse occurs. The original Moniz operation,[9] with cores cut in the frontal white matter, is of only historical interest. The same may be said of gyrectomy (Penfield[10]), topectomy (Pool[11]), unilateral lobotomy (Scarff[12]) and cingulectomy (Whitty[13]). An inadequate operation is useless, a radical one is ruinous.

Anatomopathologic studies by Meyer and Beck[14] in England showed that lobotomies were never entirely symmetrical, and that there was a great discrepancy between what the surgeon described and what the pathologist found. These studies, however, were the means of eliminating the more useless and ruinous operations and of focusing attention upon those areas of the brain that are of significance in the emotional charge investing the abnormal ideas. A successful operation bleaches the affect attached to the ego, without disturbing intelligence, memory, or personality functions.

Scoville[15] introduced cortical undercutting. The orbital regions were found to be the most important. Hirose[16] limited his incisions to the orbitomedial quadrants of the frontal lobes with equal or better results. From the early work of Poppen[17] incisions in the medial portions of the frontal lobes yielded greater benefits without damage to the personality. In England, where psychosurgery enjoys a much more respectable place in therapy of mental disorders Knight[6] has made his incisions 2 cm. wide, 1 cm. above the orbital roof and 1 cm. from the midline, going back 6 cm. from the frontal pole. Anatomically these incisions are directed toward undercutting Area 13, an area that, according to Fulton, should be cautiously avoided. Knight explains that a superior approach to this area might well result disastrously. McKissock[18] continues his rostral leukotomies, with worthwhile results in most patients. I have seen him operate and can testify to the simplicity of the method, though its inaccuracy has been revealed by anatomic studies.

The transorbital method, suggested by Fiamberti[19] and which I[20] introduced into this country, aims toward the orbitomedial quadrants of the frontal lobes but not as far posteriorly as Knight's operation. This procedure has not gained much popularity. Bernstein[21] has recently refined the technique by a preliminary air study and operation under radiographic control by intensifying the image while he makes his incisions. The trend is toward accurate placement of lesions in the frontal lobes or elsewhere, either by stereotaxis or by the insertion of multiple energizable electrodes, probes or seeds, and by high energy ultrasound or proton beams. Injections of procaine (originally done by Moniz and Almeida Lima), blood, and hot water have been simpler but less reliable. Some of these methods are worthy of examination.

The latest development comes from France where Le Beau and Dondey[22] use stereotaxis to introduce a 2-way cannula through which liquid butane is injected, the evaporation of the liquid causing cooling. At 20° C synaptic transmission ceases and symptoms subside. At 8° C there is no reaction to electrical stimulation; further cooling results in irreversible changes. The lesions extend 1 mm. beyond the cannula and 5 mm. around its tip. According to the authors, the method "provides an element of security and of physiologic control in the course of neurosurgical stereotaxic procedures."

Some years ago Jaeger[23] used thermocoagulation by injection of water at 70° C through a cannula into the frontal white matter on both sides. The procedure can be repeated in case of relapse. Others, including myself, have used injections of the patient's own blood for its mechanical effect on disrupting the fibers in the frontal lobes. However, the blood is apt to follow the longitudinal pathways of the fibers and may be found at a distance from the point of injection. Lazorthes and his colleagues[24] used saline injections 3 to 8 times to produce mechanical disruption, and then a rubber balloon (à la Cooper) to produce pressure necrosis. Large lesions in the frontal white matter were more successful.

Lindstrom[25] and Fry,[26] independently, have used the ultrasonic beam applied through a transducer to the intact dura. The lesions are found in the white matter rather than in the cortex, but in a cone, with the greatest destruction beneath the area of application, and the apex toward the base of the brain. Focused ultrasound is still in the stage of development, and requires multiple trephine openings in order to concentrate the beam on the important orbitomedial quadrants.

Stereotaxic placement of lesions by electrocoagulation was introduced by Spiegel and Wycis[27, 28] and followed by a number of investigators. The dorsomedial thalamus was the first objective, and when relapse occurred the frontal white matter was electrocoagulated, with additional improvement. The authors applied this stereotaxic method to a number of conditions other than mental disorders proper, such as intractable pain, parkinsonism, dystonias and epilepsy. Lesions were placed in different locations, according to the effect desired.

Electrocoagulation of deep cerebral structures has been employed by a number of surgeons, both here and abroad. Herner[29] studied 113 such cases in Sweden. From Japan comes a report by Sano[30] comparing thalamotomy, fornicotomy, upper mesencephalic reticulotomy and anterior cingulectomy, none of which was really effective in severely disturbed patients that he calls "agitated idiocy" (probably childhood schizophrenics). Sano obtained his best results by producing electrocoagulative lesions in the "ergotropic zone" of the hypothalamus. Stimulation of this posterior area produced intense sympathetic discharge, and bilateral lesions, 5 to 5.5 mm. in diameter, produced by a monopolar electrode with 15 v, 3 to 5 ma, resulted in somnolence lasting 7 to 10 days, after which the patients became calm and tractable.

White[31] implanted electrodes in various parts of the frontal white matter for several weeks and at intervals applied high-frequency current to one electrode after another. If a weak current to a certain electrode gave a temporary relief of pain, he then turned the current up until he heard bubbles of steam escaping. He concluded that, in many individuals, pain, dread of disease, and narcotic habituation can be relieved without paying the price of psychologic deterioration.

Crow et al[32] inserted 48 to 68 fine gold needles into the frontal white matter, leaving them for several months while weak currents were passed at intervals until the most effective ones were found, and then applying the coagulating current.

Knight[33] recently has inserted 8 seeds of radioactive yttrium (Y^{90}) into the white matter above Area 13. In 25 patients he observed complete relief in 8, cures in 10, and improvement in 4, with no deaths. "Operation in the region of Area 13, therefore, has a marked effect in diminishing the intensity of depressive illness. It, likewise, diminishes the intensity of emotional reaction in certain cases of obsessional illness and chronic anxiety states. It has been effective where the standard leukotomies have failed. It produces improvement in some cases of hysteria but is insufficient in others who require the fuller operation, possibly to produce a blunting of affect." The results of Knight's studies on the posterior orbital areas have been reported in great detail by Sykes and Tredgold.[34]

Larsson, Leksell and Rexed[35] irradiated a few patients with a 3 mm. beam from a synchrocyclotron at 185 MeV producing complete necrosis in the target area. They obtained relief of suffering without side-effects.

Epilepsy. In many patients with convulsive states the behavioral disorders are far more disabling than the seizures. Hence, many surgical procedures have been devised for bettering the patients' social adjustment. The pioneering efforts of Penfield and his colleagues[36] have only to be mentioned to excite a glow of admiration. The hazards of bilateral operations on the temporal lobes, with their devastating effect upon recent memory, apparently the inability of the patient to fix his current experiences, have caused surgeons to avoid the hippocampus, yet it is well established that the neighboring amygdaloid nucleus is the most epileptogenic area of the whole cerebrum. Temporal lobe epilepsy, with its myriad manifestations, is being studied intensively by depth electrography, and cortical excisions of the foci are standard procedure. For verification of the hemisphere dominant for language, the intracarotid injection of Sodium Amytal® is a must. In an effort to avoid the dangers of temporal lobectomy, especially in cases of bilateral temporal spikes, Turner[37] has devised 3 different lobotomies.

Operation 1 consists of a quadrantic section in the coronal plane through the roof of the temporal horn, 1 cm. posterior to its tip.

Operation 2 is similar but cuts downward through the hippocampus, making a section through the alveus and the underlying formation.

Operation 3 is a basal frontal lobotomy. Burr holes are made 3 cm. behind the lateral orbital margin, 6 cm. above the zygomatic arch and 10 cm. behind the nasion in the sagittal plane.

"It was found that lobotomy of the temporal lobe isthmus in the roof of the descending horn greatly improved major psychomotor attacks and the temperamental disturbances of uncontrollable rage or fear, and improved grand mal to some extent. Basal frontal lobotomy improved depression and hypochondria but did not consistently improve the ictal manifestations. Hippocampal section behind the uncus was used in conjunction with lobotomy of the isthmus in an attempt to improve minor attacks of confusion and automatism, but too recently for proper assessment. No deficit of intellect or memory was found after any of these procedures. None of them improved paranoid features."

Comment

Where does all this leave us? It seems quite certain that the orbitomedial quadrants of the frontal lobes are important objectives in patients suffering from anxiety, depression, unbearable pain and psychosomatic disorders. The choice of operation depends upon the surgeon, the patient, and the facilities available. A desperately suicidal patient is a risky subject for some of the refinements described above. They take too much time. An overactive, destructive and violent schizophrenic would hardly coöperate in the placement of lesions by stereotaxic methods that require hours for the preliminary adjustment of the apparatus, together with the necessary air study and other roentgenographic manipulations. Furthermore, such operations are hideously expensive in terms of man-hours, and in the present state of our professional relations with the Government at various levels would be financially out of reach, except in research institutes. Nor would the "goal-directed" operations (Riechert[38]) reach even 1 per cent of patients who are candidates for psychosurgery.

In this, as in any other field of endeavor, I would point to 4 stages: discovery, exploration, development, and simplification and application. The stage of exploration has by no means been completed in psychosurgery. The brain has yet to be mapped in detail. Yet, enough different methods have been developed so that the dangerous, the damaging, the ineffective, and the complicated operations can be either avoided or reserved for special cases.

The orbitomedial leukotomy of Knight and of Hirose, and the transorbital lobotomy as developed by me, will "cure" 80 per cent of patients with affective disorders and arrest about 50 per cent of schizophrenics.

Temporal lobectomy is presently the operation of choice for the behavioral disorders of epilepsy, though the simpler severing of pathways by Turner and by Hirose look promising. Future advances in psychosurgery will come when an operation is devised that will suppress hallucinations. Williams[39] and I tried extirpation of the amygdaloid nuclei in enough cases to find a negative answer. Sem-Jacobsen and his colleagues[40] went a little further before the eclipse of psychosurgery by the tranquilizers, but the problem of hallucinations is still with us. As a matter of fact, the open-door policy of our mental hospitals is becoming the revolving door, with readmission of many relapsing patients. Time is the greatest enemy of the schizophrenic patient. It is safer to operate than to wait.

Psychosurgery has 2 objectives: relief of suffering and restoration, as nearly as possible, of the patient to adequate social adjustment. Surgical procedures can achieve both objectives in a substantial proportion of distressed patients. When milder measures fail lobotomy or one of its congeners should be considered.

(*Continued on page 201*)

Sex in Today's Culture—A Concern of Religion and Medicine*

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We have in this country a strongly sex-oriented culture. This is a result of many factors, among them our worship of youth and all that is young and virile, and a denial of, or depreciation of old age and even of the wisdom born of years.

Part of our culture in its efforts to control sexuality seems inadvertently to call undue attention to it. As many have pointed out, when a group insists on suppressing the sex instinct in everything the group betrays the fact that it really sees that instinct in everything. Along with the inhibitors, with their unintentional advertising, we have the exploiters of sex—those who use it to sell merchandise of every kind, household items, cars, clothes, books, movies, magazines, and even sex itself. Recently I saw a truck from an oyster dealer in New Orleans that had printed on its side in large letters, "Eat oysters and love longer." Thus youth, potency, and sex appeal are at the center of our value system.

Because of a multitude of social, economic and religious factors sex has not been viewed in our country with any kind of balanced perspective. Out of this unbalanced perspective have grown some major complications and by-products. In my discussion I shall focus on a few of the pertinent issues influencing sexual behavior in today's culture.

The Teen-ager

We are seeing today the downward shifting of behavior patterns from the twenties to the teens. Behavior that was frowned upon for college students a generation ago is now the behavior one finds to be fairly typical in many communities among teen-agers.

The teen-agers have now furnished us with a new subculture with its materialistic values, emphasis on immediate gratification of pleasures, infantile responses to superficial communication media, and immature emotional approaches to basic problems.[1] Psychiatrists have always considered quite healthy the postponement of gratification of certain instinctual needs until a proper time in the future. This sound position is being attacked on all sides and often by the parents of teen-agers.

Fortunately, there are many strong parents with the ability to resist the argument that popularity among teen-agers can only be achieved by doing what the group is doing. There are many adolescents whose needs are satisfied without trying to advance their experiences before their time or who engage in fruitless infantile activities. The danger, however, of the behavior pattern of sexual license and antisocial behavior lies in the creeping involvement of more adolescents coupled with the greater acceptance by more parents of the rights of their youngsters to engage in unacceptable behavior activities. Thus these behavior patterns become more and more deeply rooted and more and more difficult to extirpate. The picture becomes a frightening one, since few people have the fortitude to resist the many changes that are taking place in terms of attitudes toward and involvement in sex.

Teen-agers need some controls. They often cry out for limits to be placed upon them to help them deal with their impulses or with the efforts of others to exploit them. Completely permissive parents and teachers are not helping them at all with the controls they need. In such permissive settings we are seeing many forms of acting out, antisocial behavior, psychosomatic disturbances, or frank forms of mental illness.

Also, one cannot help mentioning that parents often act out their hidden, forbidden impulses through their children. In the closeness of the family unit parents can communicate nonverbally and without conscious awareness their interest in "living it up" and in the most subtle ways encourage children in activities that they (the parents) would not have permitted themselves to indulge in. Thus, they vicariously share in their children's forbidden experiences. This phenomenon of acting out of forbidden impulses through children, as well as parental pampering, overprotection, and readiness to minimize any alleged misbehavior or defection makes the psychotherapeutic role of the pastor and physician doubly difficult with these teen-agers.

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* Fourth Annual Davidson Lecture on Religion and Medicine, presented before the Medical Society of the District of Columbia in Washington, D. C., December 9, 1964.

There are some things we can do to help the teen-ager. We can make an effort to familiarize ourselves with the psychology and the physiology of the teen-ager. Parents should reassert themselves by assuming their rightful roles. At the same time parents should engage in exemplary behavior that will make it untenable for argumentative teen-agers to maintain that their ethical values are not far different from the practices of the adults around them.

Erich Fromm has repeatedly stressed the fact that after man broke his primary bonds to nature and developed his supreme individuality he found himself alone, isolated, and anxious. Surely the teen-ager today is often alone and in exile. Recently, a boy was discussing with me his parents. He told of their busy lives and their inability to express any affection for their children. "Last night," he said, "I dreamed I was standing between my parents, holding their hands, and hoping to catch a part of the little warmth that was passing between them." This boy has many emotional problems and some sexual difficulties.

Much of the isolation and aloneness which an individual feels can be neutralized by the love and warmth of family life. In those families in which there is neither love nor warmth the atmosphere is not healing for parents or children. Sex then may be used in a frantic effort to find some closeness, some sense of belonging. Just such a phenomenon may explain some of the sexual behavior of teen-agers, desperately seeking ways of filling empty lives.

Destructiveness of attitude and behavior is nurtured and strengthened during the course of faulty upbringing of a child in his family and through influences in his neighborhood. We should rethink our position on the cause of crime, sexual promiscuity, delinquency, and other forms of antisocial behavior and question the assumption of relating antisocial behavior mostly to mental illness or extremes of poverty rather than to the absence of, or to faulty value education. If religious, social, and moral values are not presented to children in their formative years they most likely will lack them.

Conscience is recognized by most authorities as representing inner controls. Although the capacity for conscience is innate, and there are dimensions of conscience that extend beyond mere socialization, much of the content and application of conscience comes from the family and society. Thus, the child needs to be introduced to the higher value system of the group in which he is living. Where instruction is not given, or where the family and society have become uncertain of basic values and consequently have developed a collective instability and uncertainty about values, one sees a developmental defect in the spiritual and moral dimension of man.

I am not suggesting that we be punitive or overly restrictive toward teen-agers. I am emphasizing that teen-agers need to know something of discipline and controls. And when they see the fruits of a disciplined life they respond positively. The movie, "The Bridge Over the River Kwai," struck a responsive chord with thousands of teen-agers across our land because many of them saw for the first time a higher value in the disciplined life than they had ever known before.

I covet for teen-agers the opportunity to grow into adulthood without having jeopardized their health and happiness with potentially dangerous or destructive experiences. Possibly our society is cheating teen-agers of one of their most precious heritages by letting the sexual flower, figuratively speaking, be picked when it is only a bud, thus never reaching the splendor of its full bloom.

The Changing Status of Women

One of the major trends in our society is the changing status of women. The new freedom in vocational opportunities has brought with it new sexual freedom and a change in the role of the woman. A European social scientist came to this country a few years ago to observe and study our way of life. When asked about his observations he replied, "In America the furniture is too soft and the women are too hard."

Modern medicine has removed from woman many of the causes for fears and anxieties which have haunted her through the ages. Fears about child-bearing, infant mortality, and a variety of infections to which she was so vulnerable in the past no longer plague her. Yet, modern society is now so constituted that other, perhaps more devastating, anxiety-producing situations have arisen. These in turn exact their psychologic and physiologic toll. The woman's motherly role and her historical role in home-making have been greatly reduced by our culture. Her child-bearing and child-care contributions to society diminished as the birth rate fell. Her usefulness as teacher and supervisor of her older children has suffered as schools have assumed more and more of the emotional burden and as teaching the arts of homemaking and child care has declined. And even in our modern day, if she seeks an occupation outside of the home, not only does she go into an environment where she frequently encounters disturbing problems, but success in her work outside of the home may bring about an even greater denial of her biologic female role.[2, 3]

A woman theologian, Valerie Saiving Goldstein, has raised some important issues in this statement of hers:

"Perhaps, after all, the contemporary woman who wants to participate in the creative tasks of the world outside of her home—those tasks upon which mankind has built all that is distinctively human, that is, history and culture—and yet remain a woman is attempting an impossible task. Perhaps the goal we should set ourselves is to rear our daughters in the older way without too much formal education and without encouraging them to be independent, differentiated, free human beings of whom some contribution is expected other than the production of the next generation. If we could do this our daughters might be able to find secure fulfillment in a simple femininity. After all, the division of labor between the sexes worked fairly well for thousands of years, and we may be only asking for trouble by trying to modify that structure." [4]

Dr. Goldstein goes on to say that we cannot turn back this particular clock, nor is the feminine dilemma of concern only to women. It is a loss to every man when a woman fails to realize her full self-identity. Also, many authorities are troubled by the growing trend in contemporary life toward the feminizing of society itself, including men as well as women. Both David Reisman[5] and Hannah Arendt[6] see a recent shift in the fundamental orientation of our present society toward character traits inherent in femininity and away from the previous emphasis on masculine traits.

I have mentioned the changing role of woman in our society only to imply the influence of this phenomenon on our sexual mores. Time does not permit a discussion of the implications of this trend upon present-day sexual practices.

The Family

There are conflicting viewpoints regarding the strength of the family in our culture. Some authorities stress that for man monogamous marriage is a bizarre and unnatural state that does violence to man's biologically ingrained instinct for promiscuity. These authorities also point out that in most of the mammalian world the strong male impregnates as many females as possible with beneficial genetic results and that the human male shares this same urge and that to circumvent this tremendously powerful natural instinct is a traumatizing experience. In response to these authorities I would like to concede that there is some truth in what they say but that man, unlike other members of the mammalian kingdom, has through the years spent much of his time in a spiritual quest as well as in the biologic endeavors mentioned. There is more to being a man than coping with biologic urges.

Talcott Parsons[7] has stressed that what underlies the high divorce rates of our society is not, as is so commonly alleged, a decline in the importance of marriage or people's indifference to it, but exactly the reverse. Divorce is an index of the severity of the burden placed on marriage in modern society and of the importance of its function. Parsons goes on to say that the importance of the family and its strength are indicated by the family's growing popularity in the face of its loss of so many older functions. Thus, if one considers the strains upon the American family he is astonished to find so little dissolution. It is worth noting that 75 per cent of those whose first marriages fail marry again, mostly within 5 years and mostly with happiness and success. This may be a more significant statistic than the high divorce rate.

It is too obvious to mention that the family holds the key to the solution of many of our sexual problems. A man's goal should be to develop into a good husband and father, and a woman's goal to develop into a good wife and mother. The highest function of sex is to promote the achievement of these aims. Hardly anyone will contest the fact that the optimal condition for sexual response in the healthy woman is complete and absolute faith in the love and devotion of her husband.

The family is also the best place for giving sex education to children. Schools and colleges have a responsibility in this field, but this is a responsibility shared with the family. Our neglect in this area of health education has been a grievous oversight. Sex education possibly can be one of the effective measures in preventing much of the sexual crippling seen today in our society. Even medical schools have been negligent in properly training young physicians for their responsibilities in marriage counseling and sex education.[8]

Implications of Changing Mores

The physician is confronted with many practical implications of the present-day sexual revolution. Doctors are recurrently faced with emergencies and must be prepared for them. They manifest a certain impatience toward long-winded discussions about the good and the philosophical implications related thereto. As someone has said, as practitioners their thoughts must be tied to the post of use with a very short rope. They cannot split hairs lovingly.

Today many practical problems face the medical profession. The number of reported cases of infectious syphilis has been shooting upward, until now the figure is the highest since 1950, a shocking record of increase[9]:

1957—	6,251
1958—	6,661
1959—	8,178
1960—	12,471
1961—	18,781
1962—	21,143
1963—	22,251
1964—	24,000 (projected)

On the basis of a survey made by the American Social Health Association, the American Medical Association, and the United States Public Health Association in 1963 there is evidence that throughout the country private physicians, who appear to be treating approximately 75 per cent of all patients with venereal disease, are reporting to the local health departments only an approximate 11.3 per cent of the cases of primary and secondary syphilis which they treat. "If allowance is made for the cases treated by health departments and other clinics it would seem almost certain that at least 100,000 cases of infectious syphilis were diagnosed and treated in the United States during fiscal 1963. How many cases were undiagnosed and untreated is not known."[10, 11] By far the highest incidence of syphilis is in the 15- to 24-year age group. There is little doubt that promiscuity plays the largest role in the spread of venereal disease. With the changing sexual mores in all socioeconomic strata it is not astonishing that venereal disease is increasing also.

The problem of gonorrhea is even more prevalent. Other hazards are the phenomenal increase in criminal abortions and illegitimate births. These are all critical situations in which the medical profession and the church are struggling to find answers. The increase in these serious social and health problems is certainly related to our changing patterns of sexual behavior.

Physicians are asked if abortions should not be legalized in our country because of the tragedies often arising from criminal abortions. Other tragedies are associated with unwed motherhood and the illegitimate child. As has been pointed out by churchmen, over long periods of history illegitimate children in Christian countries have been shockingly treated compared with their counterparts in a polygamous African community. People in trouble because of sexual transgressions in our culture seem seldom to have the opportunity of choosing between good and evil but must choose the lesser of 2 or more evils.

Physicians have no correct answers to many of the questions implied in the above statements. Never before in its history has medicine so desperately needed the Church's finest guidance in dealing with the multitude of moral and ethical decisions forced upon medicine by the vicissitudes of daily practice.

Conclusion

A social code expresses a norm that seems to be necessary for maintaining the existing structure of society and community life. With the development of knowledge of needs the pattern of society changes. The social code changes in this process because an increasing number of people break away from it and thus force changes in the code. The ethical or religious code is more demanding and long-lasting, since it is, in its essentials, changeless and eternal.

At the present time in our society the social code is changing rapidly while at the same time the ethical and religious codes are being widely questioned. Thus, it is inevitable that a great deal of pain and confusion will be encountered by individuals of all ages who do not "know where they are" in matters of sexual behavior.

There still exists in our society today a repressive and inhibited outlook toward sex. This outlook has invested a normal function with guilt, mystery, and ignorance. It has hindered the gathering of facts and the conduct of research. It has played a part in reducing the handling of sexual topics to the levels of sensation and pornography. When we consider the universality of the sexual drive our understanding of its origins and manifestations is small indeed. Thus, we must remember that sexual behavior and moral outlook are much more conditioned by upbringing and by prevailing cultural beliefs than most people realize.

I have been asked to approach this discussion from the medical rather than the religious point of view. The physician, however, is not necessarily a man without faith. His faith, however, is not complicated. He sees in the Judeo-Christian tradition a simple and demanding concern, a concern with relationship, the relationship of man with man and man with God. "Thou shalt love the Lord thy God with all thy heart, and with all thy soul, and with all thy mind, and . . . thy neighbor as thyself. On these two commandments hang all the law and the prophets" (Matthew 22: 37–40). Probably the physician has never accepted a distinction between the sacred and the secular. "In sexual matters the unity of the sacred and the secular involves this implication: that the sacramental quality of a sexual relationship depends upon the spirit and intention of the persons concerned, not upon any atmosphere or circumstances provided from outside." [12]

Thus, sexuality looked at dispassionately is neither good nor evil but is a fact of nature. The physician cannot dictate what people ought or ought not to do. He is confident, however, that there must be a morality of some kind to govern sexual relationships. An experience so profound upon the individual and the community cannot be left wholly to private judgment. Although the sexual act is private, it is not without its profound impact on society. However freely the individual may express himself, he cannot free himself of responsible freedom. Also, in any discussion of sex, the need to preserve marriage and family life must be in the forefront. Most people agree that the family as a social unit should be safeguarded and sexual practices that threaten its stability strongly discouraged. In marriage sexuality has its greatest opportunity for happy and creative expression. Responsible freedom can be experienced in an unreserved commitment to each other by the marriage partners. Two people thus committed can bring children into the world and provide them with the security of love and home.

The medical profession should join with the Church in stressing the need for a reaffirmation of the spiritual meaning of sex. Its sacramental dimension must be rediscovered, for the act of sex is the supreme act of communion between two people. Unfortunately, as a recent report mentioned: " . . . Like every gift of God it can be misused, and when it is misused the degradation to which men and women can be lowered reflects the heights to which they might be raised by its proper enjoyment." [13]

When such a difficult and multifaceted topic is discussed one's discussion should have some similarities to a good map where choices in routes can be exercised but on which no rigid route is marked for all to follow. Yet there must be something to guide us in our sexual practices. Our best indicator may be our orientation about the nature and destiny of man. As for my view of man, it is summarized well by an old Hasidic story, from Martin Buber's "Tales of the Hassidim," of a pupil speaking about his teacher: "Once I was present at a conversation between my teacher and a widow. He spoke to her of her widowhood with the kind words of a comforter, and she took his words as comfort for her soul, and gathered strength from them. But I saw him weep and I myself could not help weeping; and then I realized that he was speaking to the widowed glory of God."

EDITOR'S NOTE: For the Fourth Annual Davidson Lecture on Religion and Medicine there was also a paper on the same subject by the Reverend Tom Faw Driver, Ph.D., Associate Professor of Christian Theology, Union Theological Seminary, which will be published in a theological journal. Information on this can be obtained by writing the author at the Seminary, Broadway at 120th Street, New York 27, N. Y.

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(*Continued on page 202*)

Screening for Chronic Diseases in a Low-income Group*

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A series of research projects have been conducted in the Department of Preventive Medicine and Public Health at Howard Medical School concerning an important problem in preventive medicine—delay in seeking medical care. Attention was centered on low-income Negroes in Washington, D.C. Possible solutions to this problem were then sought.

The initial study, reported on by Dr. Paul B. Cornely, Head of this Department, brought some important facts to light, which led to further detailed investigations and programs. One of these discoveries was the widespread lack of knowledge in this group concerning medical and public health facilities—where they were, what specific services they render, and how to go about getting care and services.

In a subsequent study, upon which we reported, the findings suggested that additional factors related to a lack of motivation to seek medical services because of:

1. A lack of knowledge concerning the need for medical care
2. A lack of knowledge concerning the results of medical care—short of "cure" or "no cure" (i.e., death or persistence of symptoms)
3. A preponderance of a large number of social problems.

This 3-year Demonstration Project supported by the Community Health Services branch of the United States Public Health Service is an attempt to meet these needs. Based on the above findings, this project was designed with the following features built into the program:

A. A determined block-by-block, door-to-door interview in every dwelling unit in our specific area, the Second Police Precinct, which at the time of the inception of the program was said to be the worst (wickedest) precinct in Washington. Information is collected on health and social problems, and appointments are made and aggressively pushed for those with specific symptoms.

B. A detailed social history by a professional worker, in which an analysis and an evaluation of the client's social problems are made. Referrals are then made by the Social Worker to social and welfare agencies existing in the community. Appointments are made over the phone and the client given instructions, both written and verbal.

C. A complete physical examination by a physician, in which each step and each procedure in the examination are explained to the patient. This is followed by a final conference with the physician concerning the total findings and their implications to the patient. Similarly, medical referrals are made to medical facilities after it is ascertained which facility, public, private, or private physician, and which physician, the patient selects to go to.

D. A close follow-up on the patient, both to the patient's home and the referral agency (including the private physician) to discover if and when the patient went and the outcome of the visit.

The project has been operating for a little over 2 years with nearly 2,000 cases registered.

An analysis of the social areas of the program reveals that we are dealing with a group of people who, although they realize their need for education, are unable to do anything about it, being victims of unemployment, poverty, bad housing, and a host of other problems. They voice a need for spiritual assistance but do not seek it although they know where it can be obtained. Some do not verbalize their other social problems, and even a large proportion of those who do, do not avail themselves of the community resources for one reason or another.

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* Presented at the Sixty-ninth Annual Convention of the National Medical Association, Inc., in Washington, D. C., August 3, 1964.

There are important implications here for a physician in giving medical care to patients of this type. It shows first the great need for "comprehensive care" of the type concerned for the whole person, the almost uselessness and/or perhaps impossibility of making him physically well when all about him is sick. The physician cannot be expected to cure the person and all his problems, but just showing interest and concern for the whole man will help the doctor-patient relationship and may also help the whole man, the highest service any one can perform.

Medical Aspect of Screening and Referral Service*

The medical aspect of this program is concerned primarily with the early detection of chronic diseases and referring the patients to appropriate agencies or private physicians for further diagnostic procedures and care.

The term "chronic diseases" is used as it is defined by the U.S. Department of Health, Education, and Welfare in its National Health Survey of 1957–1958.† This includes a check list of 26 conditions and 9 impairments. If the condition does not appear in these lists it is considered to be chronic if it is described by the respondent as having first been noticed more than 3 months before he arrives at the clinic. Although emphasis is placed on chronic diseases, acute conditions, if present, are given the same attention, and this will be noted in the results which are to follow.

After registration each person completes a Cornell Medical Index (C.M.I.) which is intended to highlight symptoms that are related to the various organ systems. This is followed by a more detailed elaboration on questions answered "yes" in the C.M.I., a history of past illnesses and a family history. The physical examination itself involves a preliminary determination of:

1. Weight and height
2. Pulse rate and respiratory rate
3. Test for distant vision (Snellen's)
4. Blood pressure determinations
5. Test for glaucoma.

In the physical examination which follows special attention is given to organ systems mentioned in the complaints of the Cornell Medical Index and the history of present illness, if any.

This examination is concluded with an electrocardiogram, the taking of a Papanicolaou smear on all females, when possible, and the taking of urine and blood specimens. The blood tests include a determination of the hematocrit and hemoglobin, blood sugar, and serologic test for syphilis. The average time taken for this procedure is 45 minutes.

Results during the period from July 1962 to May 1964:

1. Total cases screened: 1,786
   a. Males 26 per cent
   b. Females 74 per cent
2. Average number of new cases per day: 5
   Revisits on an average of 30 to 35 per month
3. Number of cases screened as having no abnormalities: 231 or 13 per cent
4. Total number of conditions detected: 4,371, which averages 2.5 conditions per case
5. Total conditions needing referral for treatment: 2,475 or 57 per cent
6. Median age group: 25–44 years.

Conditions screened in descending order of frequency:

	Per cent of Total Conditions
1. Arthritis	12.4
2. Hypertension	11.9
3. Obesity	11.5
4. Gynecologic conditions	10.8
5. Ametropia	10.3
6. Miscellaneous—mostly acute conditions excluding acute respiratory	9.2
7. Cardiovascular diseases—excluding hypertension and ischemic heart disease; includes organic heart disease and peripheral vascular disease (all criteria based on Health Statistics, U.S. National Health Survey, Series D, No. 7, December, 1961)	8.7
8. Acute respiratory conditions	5.6
9. Dermatologic conditions	2.8
10. Chronic respiratory conditions	2.2

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* This is Part II of the Report. Most of Part I has been omitted because of an excess of statistical data of no particular interest to the practitioner.

† Health Statistics, United States National Health Survey. Washington, D. C.: Department of Health, Education, and Welfare, July 1957–June 1958.

11. Diabetes mellitus and genitourinary conditions	2.0
12. Gastrointestinal disorders	1.9
13. Ocular hypertension	1.6
14. Ischemic heart disease	1.5

Agencies to which cases were referred:

Percentage referral by cases: 67

	Per cent
1. Freedmen's Hospital	45.5
2. Private medical doctor	31.1
3. Other (Washington Hospital Center, Gales Clinic, George Washington University Hospital, Columbia Hospital)	14.3
4. D. C. General Hospital	7.0
5. Northwest Central Clinic	2.1

Referral problems:

1. The 1-year residence in the District of Columbia, which is mandatory as one of the qualifications for medical indigency, cannot be met in some cases. In these instances patients usually are treated on an emergency basis at Freedmen's Hospital or D. C. General Hospital and in course of time, as funds become available to them, they are encouraged to make use of private physicians. If this is not possible the emergency service is re-used until such time as they are eligible for clinics.

2. A similar procedure is used for those who do not qualify at the means test. In many cases these patients are unemployed, mostly because of illness, and are being taken care of by a relative, usually with a family. This relative is willing to provide food and shelter but cannot afford to extend his generosity for medical care. Usually such patients are referred by the social worker to Public Assistance, but the waiting period is sometimes indefinite.

3. In the detection of cervical cancer many patients cannot readily afford hospitalization for biopsy after repeated Papanicolaou smears have been positive. Usually it takes some time and repeated efforts to get these patients in for biopsy.

4. Another difficulty lies in the area of diabetes mellitus and anemia. The results of these tests arrive a week after patients have visited the clinic. It usually takes 2 or more contacts by telephone or letters to get these patients to return to the clinic so that they can be referred for treatment.

Follow-up status for first year of operation:

1. Total patients referred: 411
2. Patients that followed up referrals: 321 or 78.1 per cent
3. Patients that did not follow up: 59 or 14.6 per cent
4. Patients that were lost (no contact, no records): 31 or 7.3 per cent

Confirmation of screening diagnoses based on first year:

1. Total conditions referred: 1,151
2. Total subsequently checked at referral agencies: 893 or 77 per cent
3. Conditions confirmed: 88.4 per cent
4. Conditions not confirmed: 10.6 per cent
5. Conditions pending confirmation—records to be rechecked: 1 per cent

Revisits:

The recording of all revisits started in June, 1963, that is, approximately 1 year after the beginning of the project, and for the first 10-month period there were 306 revisits.

Fifty-six per cent of these revisits took place within the first 3 months of the original visit. These were made for the purpose of repeating smears, rechecking patients with borderline hypertension, and referring patients after receiving positive results for diabetic or anemic tests. In this first 3-month period a few patients returned with new complaints which were mostly of an acute or traumatic nature. Some also returned to give information about their visits to referral agencies.

The peak period for which revisits were made primarily for entirely new conditions, again of an acute or traumatic nature, was 6 months after the initial visit. Of all these revisits 34 per cent of the patients were subsequently referred for treatment.

Results of some laboratory tests done by the D. C. Department of Public Health, July 1962–May 1964

Total blood tests done for diabetes mellitus: 1,734. Of these 66 were positive; 21 of these gave a history of having diabetes, and 45 had no previous history of the disease. Of the 21 patients, 6 were not under care at the time of the visit and were referred for same. All 45 new patients were referred for glucose tolerance tests, 37 of which were positive, 2 were ruled out, 4 did not follow up, and in 2 the results are pending.

Papanicolaou smears: 1,180 smears were taken, and of these 45 were positive; 26 of these were repeated and found to be negative; 10 are still to be repeated, and 2 patients so far have refused another test. Of the patients in which the test was repeated the test was found to be positive in 7. Of these, 4 subsequently had biopsies which ruled out 1 patient and gave a confirmatory diagnosis in 3—in 2, Stage I cancer of the cervix, and in 1 Stage II cancer of the cervix.

Efforts are still being made to get the remaining 3 to go for a biopsy. Again the chief difficulty is the payment for hospitalization.

Four patients with other types of cancer were found on the basis of physical examination and history. Three of these were subsequently confirmed and received treatment. They included 1 case of cancer of the corpus uteri, Stage III, 1 of cancer of the larynx, early, and 1 of cancer of the stomach, early.

One patient suspected of having breast cancer was referred to the surgery clinic at Freedmen's Hospital where the suspicion was confirmed. This patient, however, signed herself out soon after admission, and since then repeated efforts have failed to locate her.

Serologic test for syphilis (VDRL):

Total tests to May 1964: 1,566.

All positive cases are followed up by the Northwest Central Clinic which forwards to us a monthly report on the disposition made.

In this period there were 103 positive tests:

53 with previous adequate treatment
15 closed because of age
7 still being investigated
5 ruled out
7 lost.

This makes a total of 87, leaving 16 who received treatment. Of these 16, treatment was completed in 4, while 12 had no history of treatment. Eleven of these had late latent syphilis and 1 congenital syphilis, unclassified.

Conclusions

The Screening and Referral Service is reaching a group of people who under ordinary circumstances would not present themselves for a routine physical examination for one reason or another. The main reasons seem to be a lack of proper education, lack of funds, and in many cases the lack of proper motivation to improve this aspect of their lives. This is exemplified by a 55-year-old woman who was screened as having 4 serious conditions, including a blood pressure of 260/100. This woman took care of her 6 grandchildren while her daughter, who was separated from her husband, went to work. At first after the findings were told her she replied that she "felt fine." A great amount of effort and time was spent to explain in layman's terms the serious implications of her conditions. With this individual interest shown, this patient was subsequently referred for care on the days her daughter was off duty.

It has not been too difficult to encourage the majority of patients to seek medical care, once individual interest has been shown in their medical as well as social problems, and a record of over 75 per cent follow-up may be considered encouraging.

The final analyses remaining will be the cross correlations between the medical and social conditions and especially between the medical and social follow-up—what influence one has on the other. This is now in the process of being done and will not be reported on at this time but will be available in the near future. Those who are interested can address inquiries to us at the Department of Preventive Medicine and Public Health, College of Medicine, Howard University, Washington, D.C. 20001.

The Surgical Treatment of Outstanding Ears

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CHILDREN AND ADULTS alike seek surgical correction of protruding ears. The condition is a source of embarrassment which leads to various reactions, depending upon the individual's total personality pattern. One has but to look through the comic pages of the newspaper to find the significance attached to "Dumbo" ears. Charlie Brown, Dagwood, Little Max and Popeye, to mention only a few, are drawn with ears standing way out from the head. Unless the "Beatle" haircut becomes a permanent institution, boys and men have little means of hiding their deformity. Although girls and women can employ a hair arrangement which will cover the ears, this may not always be the most becoming style. Besides the sociopsychologic implications some patients with outstanding ears complain of the difficulty of fitting hats and of pain in wearing helmets, caps and other headgear.

The outstanding or protruding ear requires little definition; it is understood by the lay person as well as the physician. When the angle between the cranium and the ear is great enough to be out of proportion to the contour of the head and facial features the ear is said to be outstanding. Auricle pattern is so variable that the ear may even be helpful in establishing personal identity. Many of these variations are within normal limits. It is only when the auriculocranial space reaches a certain angle that the deformity is obvious and the ear is said to be protruding.

The normal external ear is formed by the accurate growth, rotation, and junction of portions of the first and second branchial arches. Although there is some difference of opinion among embryologists, in general the first arch is considered to contribute the crus of the helix, the tragus, and the concha. The second arch contributes the remainder of the helix, the anthelix, scapha, antitragus, and lobule (figure 1).

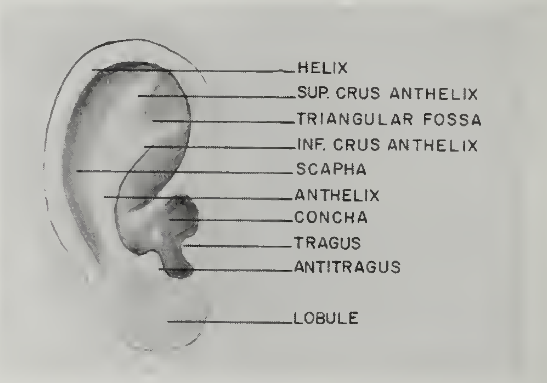

FIG. 1. External anatomy of the auricle.

Normally there is a well-defined angle between the concha and scapha, and this results in a prominent, though gently curved, anthelix which divides into a superior and inferior crus. In the case of the outstanding ear the anthelix is usually absent and there is a very small angle between the concha and scapha, or there may be none.

Although still not standardized, and understandably so, the surgical treatment of outstanding ears is a century old. The purpose of this article is not to present a historical review or summary of the literature, but rather to outline one of the present-day methods of obtaining satisfactory esthetic results. The operation described is one which has evolved from some years' experience and draws from the contributions of many early and contemporary surgeons.[1]

The otoplasty procedure may be carried out any time after the ear has attained normal

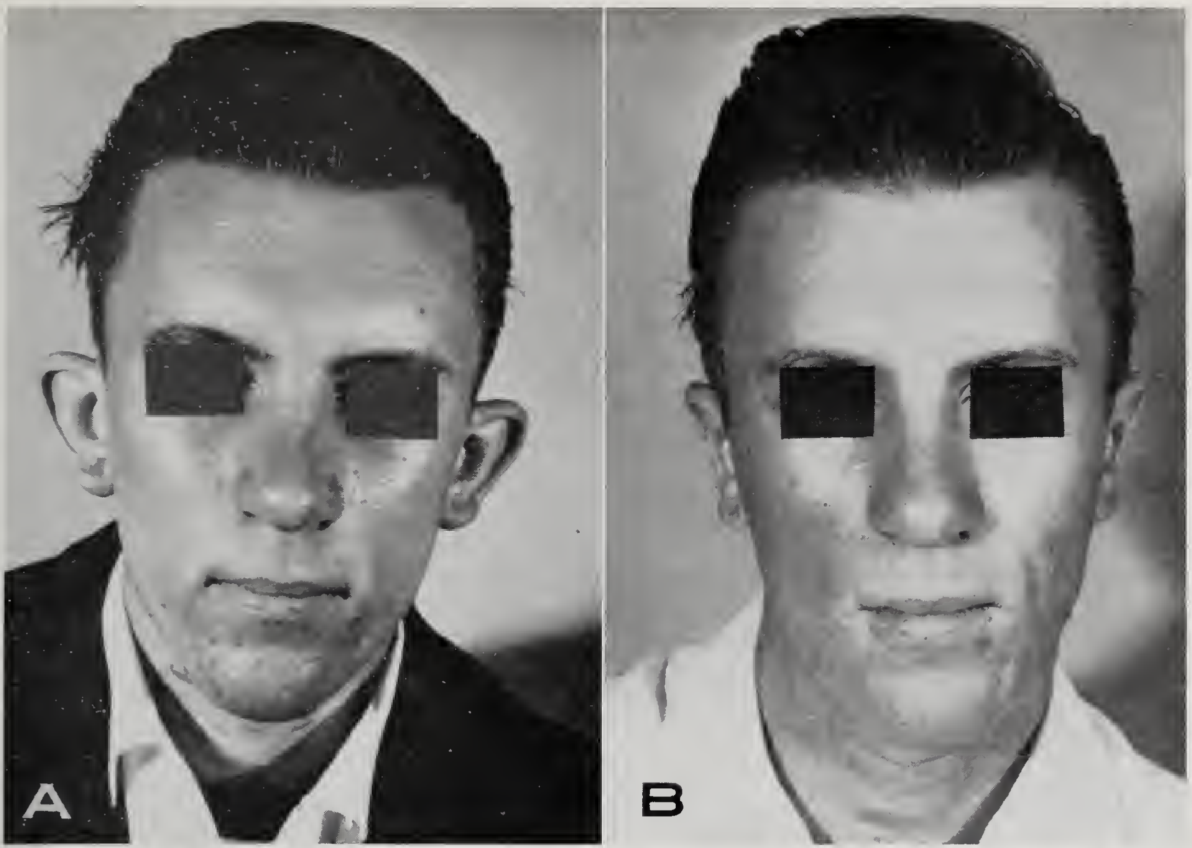

FIG. 2. A and B. Pre- and postoperative views of a 20-year-old young man. In A note lack of anthelix with resulting increase of angle between concha and scapha.

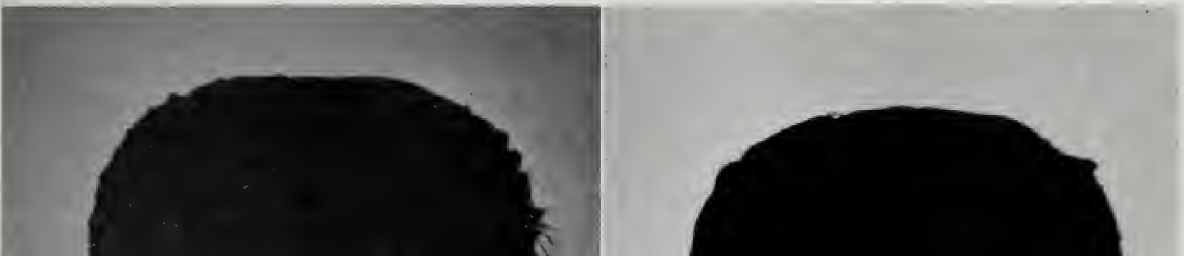

FIG. 3. A and B. Pre- and postoperative views of patient shown in figure 2.

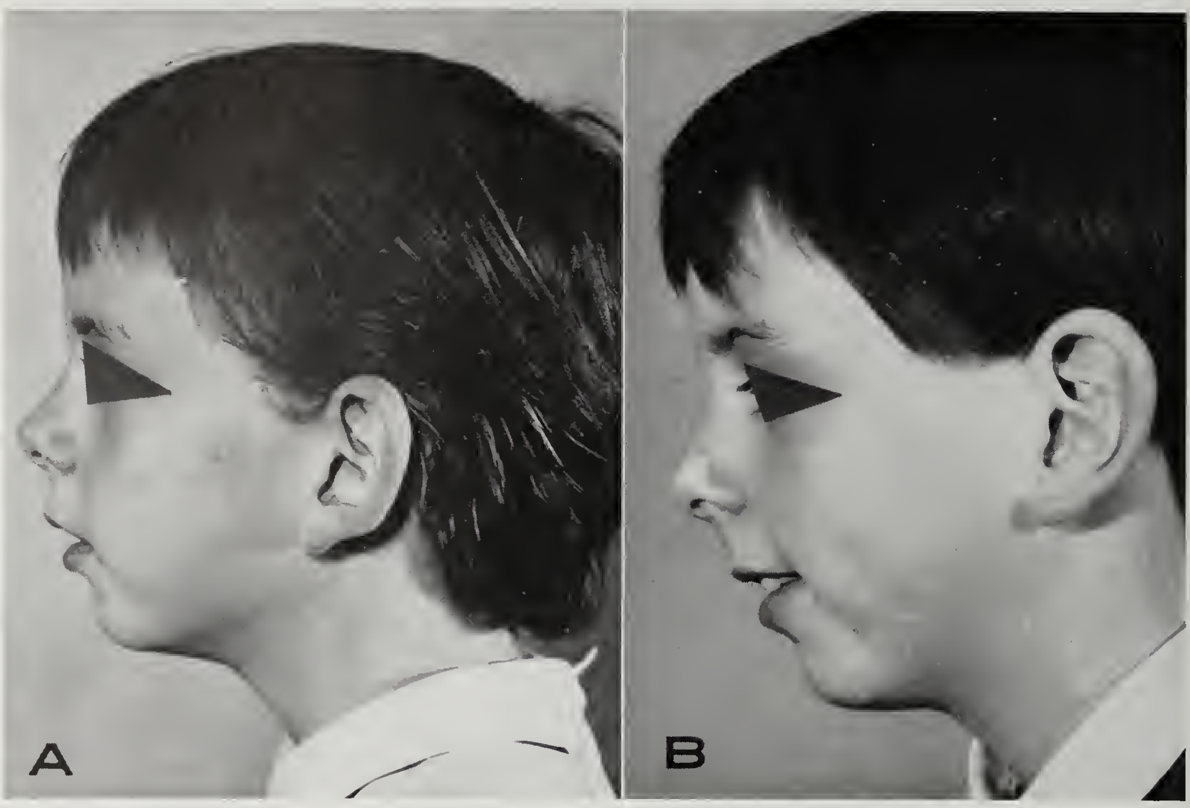

FIG. 4. A. Preoperative view of a 9-year-old girl. B. Postoperative view of same patient.

growth, which is from 4 to 6 years of age. Correction begins with a careful and accurate diagnosis of the cartilaginous abnormalities, and, as with any operation, planning of the surgical technique to be employed. Photographs are helpful adjuncts in studying the problem. Anesthesia may be either local or general. In children it is nearly always the latter. The surgery itself is a hospital procedure, but the hospital stay is likewise variable. Some adults are cared for on an in-and-out basis. Those who have general anesthesia usually require 3 days of hospitalization.

At the beginning of the operation the ear is bent toward the head into the desired position while the new anthelix together with the superior and inferior crura are marked out on the anterior surface of the ear. An ellipse of skin is removed from the posterior aspect of the ear. This not only gains exposure to the auricular cartilage but eliminates excessive skin and places the scar in an inconspicuous location. A through-and-through incision is then made in the cartilage along the previously marked new anthelix. Care is taken not to cut the skin on the anterior surface of the ear. If excess cartilage is present, it is removed along this line. When the size of the ear is not abnormal and the only deformity is lack of the anthelix, the operation will be complete when the cartilaginous spring has been broken in this manner. A more usual combination is one of a protruding ear, a large concha inferiorly, and a large scapha superiorly. In this case a strip of cartilage is removed from the scapha above and another from the concha below. When the ear assumes the desired position and contour it is secured by uniting the scaphal cartilage to the fascia overlying the mastoid process with 2 or 3 sutures. Care is taken to preserve the cephalo-auricular space. The skin edges are reapproximated, and a head dressing is applied. It should be remembered that each ear is an individual problem and must be handled accordingly.[2]

The postoperative dressing is an important part of the procedure. Until the newly positioned cartilages have attained firm union a protective head dressing is worn. This is continuous for the first 10 days to 2 weeks. It is usually worn at night for an additional few weeks. It is especially desirable to do so in the restless sleeping child. Postoperative pain is minimal and is related to pressing of the ears against the head. Results with this procedure have been successful, and complications are few. Figures 2, 3 and 4 show the results in 2 cases.

(*Continued on page 202*)

Medical Staffing of Emergency Rooms

A Trial of Group Practice

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Washington

ONE OF THE MORE SIGNIFICANT TRENDS in medical care today is the startling rise in the number of outpatient visits to hospital emergency services across the country. In an analysis of the records of 300 hospitals during 1958 McCarroll[1] reported an increase of 500 per cent in patient load to these services over the previous 15-year period. From 1958 through 1962 the United States Public Health Service[2] noted that the total number of patient visits to all emergency rooms in the country had increased from 18.0 million to 28.5 million. Based on these figures the estimated patient load to these emergency rooms was calculated to approach 50 million by 1970, a percentage gain of 112.5 over that recorded for 1960. It was also calculated that the rate per 1,000 population of people using emergency room facilities would almost double over this same period.

Typical of this trend is that seen at a 280-bed short-term, general hospital serving a large suburban area (population approximately 150,000). Patient visits to its Emergency Department have increased from roughly 6,000 to 18,000 over the past 10 years, a jump of some 300 per cent (table 1). More meaningful are the continued increments of future growth suggested by the corresponding linear graph (chart 1). Projecting the curve along the base coördinate to 1973, it may be computed that over 50,000 people will seek help from the emergency service at this hospital during that year alone.

TABLE 1: Numbers of Outpatient Visits to the Emergency Room (1953-1963)

1953	6,639
1954	7,189
1955	8,143
1956	8,527
1957	9,693
1958	10,847
1959	12,982
1960	14,304
1961	15,228
1962	17,414
1963	18,526

Of all the problems arising from this extraordinary situation, few prove so formidable as that of providing adequate medical coverage. Beyond a certain patient capacity, traditional staffing systems, i.e., house staff coverage, rotation of members of the attending staff, part-time salaried physicians, etc., simply cannot cope with the work entailed. All too often, whatever staffing arrangement is decided upon soon finds itself insufficient for mounting demands, with the inevitable risks of damaged public relations, or worse, threats of legal entanglements.

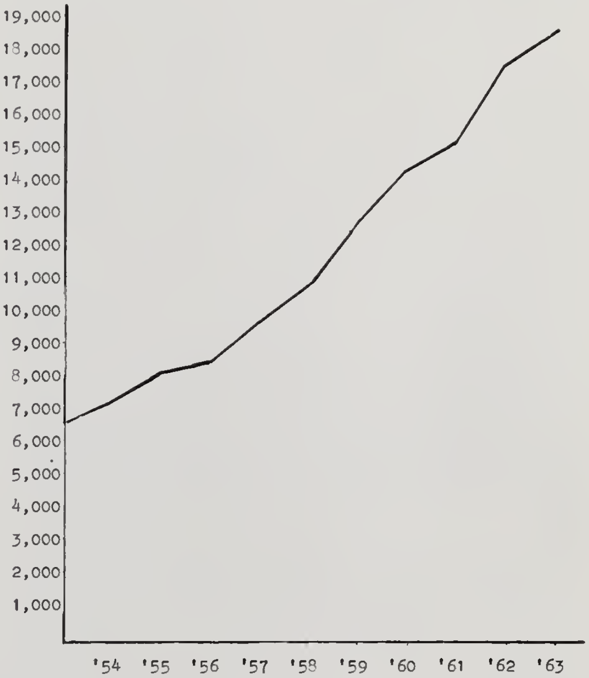

CHART 1: Growth Rate in Patient Visits to the Emergency Room.

To overcome these difficulties the administration at this hospital late in 1962 embarked upon an all but untried plan. With the assistance of the Emergency Room Committee plans were formulated to create a group of doctors whose ultimate function would be to assume complete responsibility of providing medical emergency service. In essence, this medical group would consist of licensed physicians conducting a private practice within the emergency room on a fee-for-service basis. This arrangement would thereby make the physicians independent contractors, not hospital employees, hence legally responsible for all services rendered.

The legality for such a practice within a hospital had to some extent been upheld by the Attorney General of Ohio, W. B. Saxbe.[3] In an opinion issued in regard to one of alternate acceptable methods for emergency-room staffing recommended by the Ohio State Medical Association Mr. Saxbe held that "duly licensed physicians who are members of the medical staff may incorporate as a professional group, or association, to render professional services in emergency rooms of hospitals." He further held that "such groups or associations may employ other licensed physicians who are not necessarily members of the medical staff, but that compensation for the services of these physicians must be determined and made by the association itself."

Actually, such a staffing plan had already been pioneered a year earlier by Alexandria General Hospital, Alexandria, Va.[4, 5] Its early successes were remarkable, and throughout the year 1962 it had received widespread attention.[6, 7] Moreover, the plan had been personally endorsed by Dr. Robert H. Kennedy of the Committee on Trauma, American College of Surgeons.

Considerable differences in local conditions, however, existed between the 2 hospitals. First, the Alexandria Group started with physicians well known in the community and sufficiently prominent to gain immediate, ample support from the practicing physicians in the area. Moreover, because it resolved a desperate situation for the hospital, there was, at the outset, 100 per cent backing from the Medical Staff. Finally, the municipal government of Alexandria offered a substantial, guaranteed income to members of the Group provided they would care for the medical needs of indigent patients. So important were these 3 areas of support thought to be that in a recent article Mills[5] counseled against the adoption of the program by other hospitals without them.

When the program officially got under way (at our hospital, in November 1962) support of practicing physicians was not immediately forthcoming. To make the medical group plan feasible, therefore, many modifications were introduced. Since these modifications might have practical bearing on the adoption of the group plan by other hospitals, it is the purpose of this report to describe the essential elements of the program.

Appointees

Selection of appointees to the Medical Group was made by the Credentials Committee in accordance with the following criteria: The candidate must be a graduate of a Grade A medical school with a postgraduate background of both internship and substantial formal residency training. Areas of specific interest in casualty medicine were determined, as well as attitudes toward the broader fields of medicine as seen in general practice. Particular attention was paid to a candidate's genuine interest in participating in a pioneer type program of community service.

The 4 physicians selected included 2 general surgeons, 1 specialist in internal medicine, and 1 general practitioner. None had previously practiced medicine in the area, nor were any of them widely known among the local medical and lay communities.

Relationship between the Medical Group and the Hospital

The relationship between Medical Group and hospital was formalized by contracts signed by Group members and hospital administrators alike. In essence, it was agreed that Group doctors would provide all necesary medical services rendered in the Emergency Department 24 hours a day, 7 days a week. In return for their services the doctors would be compensated by charges made to private patients. In the event, however, that collections of charges to patients did not equal or exceed a specified minimum gross compensation in an amount acceptable to all members of the Group the hospital would make up the deficiency in the form of a biweekly remittance.

The hospital agreed to collect all fees charged by the doctors, in return for which 15 per cent would be retained by the hospital to cover collection expenses.

The doctors agreed to render all necessary medical services to hospital employees and to all indigent patients without cost.

Finally, it was agreed that all future problems arising from this relationship, as well as those problems inherent in the actual running of the emergency service, would be discussed in periodic meetings between all members of the Group and those of the Emergency Room Committee. An official representative for the Group was to be elected by its members to preside over such meetings, as well as to act as a day-by-day liaison between the Group and the hospital administration.

Relationship between the Group and Area Physicians

The hospital lists 570 physicians having courtesy staff privileges, as well as 190 more on its active and associate staffs. Because of this extraordinary number of doctors it seemed evident at the outset that a crystal-clear policy was needed to define the relationship between Group members and their fellow colleagues. The policy adopted by the Group at its inception may be best expressed through the following axioms:

1. The Emergency Room Medical Group exists solely as a community service to render prompt, effective medical aid to all those seeking emergency care from the hospital.

2. As a corollary to this statement, one of the essential functions of the Medical Group is to aid the practicing physician to initiate treatment of his patient during that interval of time wherein his absence is deemed detrimental to the life or health of the patient.

3. The presence of the Group in the emergency room should in no way deter another physician from using any or all of the facilities he may choose in the treatment of his patient. The E.R. is, and should be, a common 'work-shop' for all doctors.

4. Contrary to certain policy statements appearing in the recent literature to the effect that emergency rooms must accept the obligation of treating anyone, at any time, with any complaint, the Hospital E.R. Medical Group tries to encourage all 'true' nonemergency patients to return to their family physician (if possible) without being processed through the E.R. These cases are admittedly rare, since an 'emergency' situation can rarely be excluded without the diagnostic facilities of the E.R. Nevertheless, as a policy, it serves to emphasize the fact that the Group is in no sense a 'competitor' to the family physician.

To implement these policies, the following procedures have been adopted. When a patient first reports to the receptionist's desk in the E.R. the name of the family physician is directly requested. The latter is immediately contacted by telephone, notified of the patient's arrival, and invited to relay orders. If none are forthcoming the group member on duty assumes the responsibility for the patient's care thenceforth. If admission to the hospital, major surgery, a consultant's opinion, or whatever, seems indicated, the doctor is contacted again should he have a particular preference for the facility in question. If treatment is carried out wholly in the E.R., continuity of care is accomplished by referring the patient back specifically to this same doctor, preferably with note in hand specifying the exact time and date for the appointment.

Relationship between Group and House Staff

The presence of a medical group in the E.R. need not be a deterrent to house-staff participation; it can, and, in fact, should be the stimulus for an ever-expanding teaching program. Indeed, it is incumbent upon all Group members to help the hospital discharge this responsibility.

Over the past year the teaching program has tried varying assignment schedules for the care of indigent patients; none has proved wholly satisfactory. One of the principal problems demanding clarification is the legal implications of permitting house-staff members to treat what are essentially private patients of the Group. Since indigent care consists of only 8 per cent of the total rendered, it seems imperative to me that some means be devised to allow house-staff participation in the rest of the material. Perhaps one solution to the difficulty would be the simple expedient of obtaining the consent of the patient.

Other solutions to the overall problem are currently being considered. In order to bring the house staff under more active supervision by the Group a series of formal lectures on emergency care will be given monthly by Group members during the forthcoming year.

Relationship between Group Members and Private Patients

Since a medical group within the E.R. is a relatively new concept in patient care, efforts have been made to acquaint the public with its operational details. To this effect several illustrated articles have been published from time to time in local newspapers in the county. Appropriate brochures on the subject were compiled for the E.R. waiting rooms, and 2 large, block-lettered signs, explaining the program, were posted in strategic locations.

Incumbent upon every Group member on duty is the obligation to see and evaluate every individual seeking help from the E.R. Only those patients treated by the Group physician, however, are charged a fee. Fees are standardized by the going rates for comparable services in the community at large or fixed in accordance with allowance schedules set up by various insurance companies. A basic charge is made by the hospital for the use of E.R. facilities, to which are added costs of certain medical supplies required for treatment. The combination of doctor and hospital charges usually exceeds what is customarily charged for an office visit by area physicians.

The extent of care Group members are permitted to give their patients is limited not wholly by the capacities and training of the doctor rendering it. Minor surgical problems are referred to an appropriate specialist if the procedure requires the facilities of an operating room, i.e., for lacerated tendons, nerves, etc., or the procedure is such that a long drawn-out follow-up program is anticipated, such as for complicated facial lacerations, badly infected wounds, etc. It should be stated at this point that no follow-up visits are permitted in the emergency room.

Third-party payments influence the extent of care to some degree. With fractures, for instance, insurance payments to doctors cover not only the actual reduction and immobilization but the entire after-care period as well. For this reason Group doctors are obligated to refer all patients with fracture, no matter how minor.

Discussion

Success for the medical group program must be measured not only by benefits accrued to its participating members but by its overall value to the hospital, community, and the physicians whom it serves.

That such a program holds promise of resolving a problem that has preoccupied the hospital for years is perhaps measure enough of its ultimate worth. Specifically, threats of damaging public relations from an inadequately staffed emergency service have all but abated. Economically, the Department is no longer a drag. Within 6 months following the program's inception accounts receivable were meeting the costs of the service, including the minimum incomes guaranteed to Group members by contract. What may be truly significant here, however, is the point that a medical group program can be economically feasible without large-scale outside support from city, county, or state. Of equal significance, perhaps, is that no one particular financial arrangement need be a prerequisite to the program's success. In passing it should be mentioned that at no time has it been thought by either hospital or Group that the actual emergency room should be taken over by franchise or 'on consignment.' The need for such is obviated by a spirit of mutual coöperation between both parties, an ingredient without which the medical group plan would most certainly fail anyway.

In order to earn confidence and support for the program by area physicians, 3 to 4 months were required to allay suspicions of hospital 'exploitation' and 'threatened rights.' That such support could not only be accomplished but was converted to interest and enthusiasm bespeaks the soundness of the program. It emphasizes again, however, the need for meticulous planning, in this regard, for other hospitals starting groups of their own.

From the standpoint of the members of the Group participating in the program the year has been challenging. Net incomes have steadily increased to a point where it is anticipated that by the end of the year (1964) they will match comparable median incomes earned by physicians across the country.

Culled from the year's experience is the realization that the selection of the spokesman for the Group should be no haphazard matter. To deal with several diverse professional and lay groups and to effectively represent the medical group's needs and opinions almost demand an individual with proven organizational ability and professional stature.

Problems in running an emergency service have been manifold, and they will certainly continue to be so. As the year has progressed it has become increasingly evident that many of these problems are as distinctive as those which in the past have given rise to organized subspecialties of clinical medicine. Probably no other medical specialty is in quite the same position to evaluate factors contributing to the appalling death rates from accidental injuries, poisonings, suicides, and homicides. At this hospital several projects are being formulated to evaluate such problems as the effectiveness of safety devices

(*Continued on page 202*)

Antepartum Thrombophlebitis and Pulmonary Embolization*

Report of a Case and Review of the Literature

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ANTEPARTUM THROMBOPHLEBITIS with pulmonary embolization is an uncommon disorder associated with a high maternal mortality.[1-4] That this fact is well documented in the medical literature has been recently emphasized by Finnerty and Mackay[4] in a comprehensive review of the subject up to 1961.

The frequency of antepartum thrombophlebitis given by Eastman[5] is between 0.037 and 0.1 per cent of pregnancies. Ullery[2] reviewed the reported cases up through 1954 and gave an incidence of 0.018 per cent of pregnancies. He also emphasized the high risk of embolization with its attendant high mortality rate.

The frequency statistics reported suggest that the disorder is more common than the number of reported cases indicate. The series reported above indicated that anticoagulation reduced the maternal mortality but not without risk to the fetus.

To date 231 cases of antepartum thrombophlebitis have been reported. Fifty-three of these patients had 1 or more episodes of pulmonary embolization (table 1).

The purpose of this report is to present an additional case of antepartum thrombophlebitis and pulmonary embolism, to assay our knowledge of this problem in regard to its pathogenesis, and to explore the complexities associated with formulating a safe and effective therapeutic regimen.

Report of Case

The patient (No. 116818) was a 26-year-old gravida V, Para IV colored woman in her sixth month of pregnancy. Four days prior to admission she suddenly developed acute dyspnea while walking to the store. She was forced to sit and rest but could not walk more than a few steps without dyspnea. The dyspnea was not associated with chest pain, hemoptysis or diaphoresis. There was no past history of paroxysmal nocturnal dyspnea, orthopnea, edema, or palpitation. The prior pregnancies had been uncomplicated except for 1 episode of preëclampsia. The patient did note that her hands remained cold and wet since the episode described above.

On admission the blood pressure was 105/60 mm.Hg, and the pulse rate 115/min., with a regular rhythm. The patient was afebrile and breathing at a rate of 20/min. The lungs were clear to auscultation and the neck veins were flat. The point of maximal impulse was in the fifth intercostal space in the midclavicular line. A very prominent impulse was palpable along the left sternal border, especially in the left second interspace. Pulmonary valve closure and a systolic thrill were palpable in the left second interspace close to the sternum. A loud diastolic gallop was also audible along the left sternal border.

The liver and spleen were not palpable. There were bilateral varicosities in the lower extremities. No edema or calf tenderness was noted. Homans' sign was not present.

Admission laboratory studies revealed a hematocrit of 37 per cent, a white blood cell count of 13,200, and a sedimentation rate of 35 mm./hr. (Wintrobe). Blood urea nitrogen, electrolytes, calcium, blood sugar, and serum bilirubin were normal. A serum glutamic oxalacetic transaminase level was 36 units/ml.; it rose to 64

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TABLE 1: Reported Cases of Antepartum Thrombophlebitis and Pulmonary Embolism

(Adapted in part from Finnerty and Mackay[4] with additional reported cases.)

	Total			Complicated by Pulmonary Embolism	Maternal Deaths	Total Fetal Deaths	Fetal Deaths due to Anticoagulants
Parker et al[1]	5	Treated	4	0	0	2	1
		Untreated	1	1	0	1	0
Ullery[2]	135	Treated	38	7	0	1	1
		Untreated	97	20	17	17	0
Quenneville et al[3]	57	Treated	33	3	0	5	2
		Untreated	24	1	0	0	0
Finnerty and Mackay[4]	1	Treated	1	1	0	0	0
		Untreated	0				
Feldman and Smith[6]	1	Treated	1	1	0	0	0
		Untreated	0				
Gorden and Dean[7]	1	Treated	1	0	0	1	1
		Untreated	0				
Blum[8]	3	Treated	3	2	0	1	1
		Untreated	0				
O'Hanesian[9]	1	Treated	1	0	0	0	0
		Untreated	0				
Krembs et al[10]	1	Treated	1	1	0	0	0
		Untreated	0				
Mahairas and Weingold[11]	1	Treated	1	1	0	1	1
		Untreated	0				
Burns[12]	10	Treated	10	0	0	0	0
		Untreated	0				
Barry and Olson[13]	1	Treated	1	1	0	0	0
		Untreated	0				
Epstein[14]	3	Treated	3	3	0	3	3
		Untreated	0				
Wingate[15]	1	Treated	0	0	0	0	0
		Untreated	1	1	1	1	0
Gopelrud and Anderson[16]	1	Treated	1	1	0		0
		Untreated	0				
Klein et al[17]	1	Treated	0				
		Untreated	1	1	1	1	0
Lloyd et al[18]	1	Treated	1	0	0	0	0
		Untreated	0				
Collins and Batson[19]	3	Treated	0				
		Untreated	3	3	3	3	0
Sibthorpe[20]	3	Treated	0				
		Untreated	3	3	1	1	0
Thoms[21]	1	Treated	0				
		Untreated	1	1	1	1	0
DeVita et al*	1	Treated	1	1	1	1	0
		Untreated	0				
TOTALS	232	Treated	101	22	1	15	10
		Untreated	131	31	24	25	0

* Present report.

units/ml. on the fourth hospital day. It then returned to and remained normal. The serum lactic dehydrogenase level was 170 units/ml. and rose to a high of 390 units/ml. on the seventh hospital day.

An electrocardiogram on admission showed a vertical axis and nonspecific T-wave changes as well as first degree A-V block. Serial tracings showed only the development of a peaked P wave suggesting p-pulmonale. A chest roentgenogram on admission (figure 1) did not reveal any areas of consolidation but did show a markedly dilated left main stem pulmonary artery.

She was digitalized with Digoxin® and anticoagulated with heparin and Dicumarol®. In spite of therapy her condition became progressively worse with dyspnea even while resting.

On the tenth hospital day a superficial femoral-vein ligation was performed bilaterally. Brief exploration prior to ligation failed to demonstrate thrombi. She died on the eleventh hospital day. At autopsy most of the small vessels in both lung fields were occluded by small pulmonary emboli. The major pulmonary artery and its branches were free of occlusions. The source of these pulmonary emboli was not demonstrated at necropsy.

Comment

Pulmonary embolization occurred prior to the use of anticoagulants. In this case there was no antecedent warning of thrombophlebitis. In spite of adequate anticoagulation the patient died. At autopsy the fetus showed no gross evidence of hemorrhage.

Discussion

With our case, a total of 232 cases of antepartum thrombophlebitis have been reported in the English medical literature to date. Fifty-three of these patients have had pulmonary emboli. Table 1 compares the group of thrombophlebitis patients with respect to anticoagulant therapy. Of the 232 patients, 101 were treated with anticoagulants. Twenty-two of these had 1 or more episodes of pulmonary embolization. There was 1 death. The incidence of pulmonary embolizations was 22 per cent with a mortality of 4.5 per cent. In the untreated group 31 of the 131 cases had 1 or more episodes of pulmonary emboli, an incidence of 24 per cent. Twenty-four of these patients died, a mortality of 77 per cent in the untreated group. The overall mortality associated with thrombophlebitis in the antepartum period was 18 per cent. Clearly these statistics must be viewed with caution since the collected series is extremely heterogeneous. No attempt was made to analyze the cases from the point of view of number of embolic episodes and adequacy of anticoagulant therapy.

The salient feature of the data presented is the marked reduction of mortality with the use of anticoagulants. In our case major embolization had already occurred prior to anticoagulation. It seems reasonable to assume that the earlier effective anticoagulation is attained, the more unlikely embolic catastrophies will evolve.

Quick[22] demonstrated fetal wastage in pups of dogs anticoagulated in the last week of pregnancy with Dicumarol. None survived without the use of vitamin K. Heparin, unlike Dicumarol, does not cross the placental barrier and may be used without fear of fetal wastage. Long-term use of heparin for anticoagulation is impractical, but Feldman[6] reported a patient anticoagulated for 32 weeks with Dicumarol with delivery of a normal fetus, indicating that prolonged therapy with Dicumarol is possible without fetal loss.

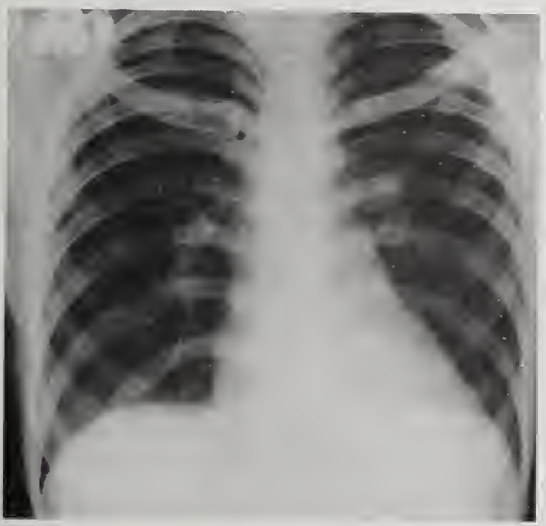

FIG. 1. Admission chest roentgenogram demonstrating bilateral enlargement of the main stem pulmonary arteries with relatively avascular peripheral lung fields.

Fetal demise is not dose-related, since marked prolongation of the prothrombin time is compatible with a viable infant.[4] In the 101 patients treated with anticoagulants there were 11 fetal deaths thought to be related to the use of anticoagulants,[1, 2, 3, 7, 8, 11, 14] an incidence of 10 per cent. However, this figure should be compared to the loss of an infant in each case of maternal mortality associated with embolization in those not treated with anticoagulants, a total of 24 fetal deaths. Although minor hemorrhagic episodes occurred, none of the authors reported a maternal mortality secondary to anticoagulation alone.

If one analyzes Virchow's famous triad: local injury, increased blood coagulability, and venous stasis, an appreciation of the physiologic consequences of pregnancy as a pathogenetic factor becomes evident. Venous stasis as a factor in thrombo-embolic disease is easily understood and represents a familiar occurrence in the second and third trimester of pregnancy. This portion of the antepartum period is associated with compression of the inferior vena cava by the gravid uterus, hypervolemia resulting from salt and water retention, decreasing diaphragmatic excursions, relatively frequent use of constricting binders, and progressive total body immobility.

Hypercoagulability during the antepartum period has received scant attention. Savitsky and Werman[23] showed that pregnancy was associated with increased platelet adhesiveness and a rapid clot retraction time. They suggested some relationship between tissue growth, platelet adhesiveness, and clot retraction since these phenomena were noted commonly with neoplasms, after trauma, and in postoperative periods in addition to the pegnancy state. Keys et al[24] noticed a relationship between hyperlipemia following the ingestion of fat and an accelerated clotting time. It has been suggested by Whitby and Britton[25] that hyperlipemia may be a partial explanation for the frequency with which thrombosis occurs in diabetes and other hyperlipemic states.

On the other hand, there is no evidence to suggest that the pregnancy state would predispose to endothelial damage. Very little, if any, has been written on the effects of pregnancy on the endothelial lining of the peripheral venous system. The major physiologic alteration of pregnancy which would seem to have some effect in preventing thrombo-embolism is the high output circulatory state which begins to manifest itself by the twelfth week.

In view of this significant combination of pregnancy and thrombo-embolism, a reëvaluation of therapeutic measures for the latter seems warranted. It is known that anticoagulants are prophylactic in the sense that they serve to prevent further propagation of fresh friable thrombi and thereby lessen the hazard of subsequent pulmonary embolization, but they do not dissolve a formed thrombus or prevent its breaking off the vein wall. Coon et al[26] and Mozes and Adar[27] have shown that anticoagulation in thrombo-embolism is not uniformly successful. It is estimated that adequate anticoagulant therapy will salvage 7 out of 10 patients with clinically diagnosed thrombo-embolic diseases who would have died from fatal pulmonary embolism.[26]

Since satisfactory information is not as yet compiled on sites of origin for pulmonary emboli in pregnancy, one cannot be precise in advocating any form of surgical therapy over another. Coon and Coller[28] in their evaluation of 383 deaths in association with pulmonary embolism were able to show that venous thrombosis was present above the inguinal ligament in 73. Although these patients were general medical and surgical cases, it would not seem likely that the incidence of venous thrombosis distal to the inguinal ligament would be higher in pregnancy. On the contrary, since the major area of obstruction lies within the pelvis, one would suspect a much higher incidence of venous thrombosis above the inguinal ligament. It would seem that bilateral superficial femoral vein ligation alone would not be basically sound. Inferior vena caval ligation is the most certain surgical remedy.[27] However, the procedure is a major operative one and associated with a small mortality and more significant morbidity. In addition this ligation may in fact be contraindicated on the basis of studies by Howard and Goodson.[29] This group was able to produce, at will, abruptio placentae experimentally, in dogs, by such ligations. They were also able to show the effect of compression of the inferior vena cava with resultant increase in uterine venous pressure in 2 women at or near term during the course of cesarean hysterectomy.[30]

In view of the seriousness of combined thrombo-embolism and pregnancy and the somewhat unsatisfactory approach of any single method described above, a combination of anticoagulant and surgical therapy may be warranted. Other modes of therapy such as the use of fibrinolysins and surgical fenestration or screening of the inferior vena cava[31] are too recent to have been satisfactorily evaluated. The latter, in particular, in combination with or without anticoagulants may prove to be the most effective measure of all. It has the advantage of obstructing all emboli from and below the pelvis as well as having no effect on uterine venous pressure.

Summary

The fifty-third case of antepartum thrombophlebitis complicated by pulmonary embolism has been reported. The subject has been reviewed and factors relating to pathogenesis, maternal and fetal mortality, and treatment have been discussed.

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PRESIDENT'S PAGE

PROGRESS AND CHANGE IN THE AMA

Whenever one writes about the American Medical Association one runs into many areas of disagreement, but at this particular time in our history I believe this must be written.

The AMA has a distinguished and enduring history of achievement in advancing the science and art of medicine. No one with a reasonable knowledge of the record would suggest that such achievements could have been accomplished with a regressive or negative attitude. The AMA through the years has been against a lot of things—anything which in the collective judgment of the physicians, who are the AMA, would retard the advancement of medicine, damage the quality of medical care in America, or hinder or destroy scientific freedom in the practice of medicine. Nevertheless, the AMA has been *for* much more than it has been against.

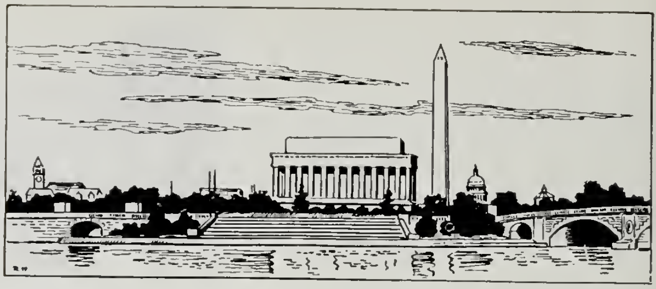
It is very unfortunate that its magnificent contributions to the health and welfare of the nation as a whole should be so largely overlooked by so many, including physicians, and that impressions of the AMA should be derived principally from the debate on just one issue, medical care for the aged under Social Security. In some respects, I fear, news commentators and politically-oriented officials have taken what seemed to be the easy and popular course of denouncing the AMA without making an open-minded effort to appraise all the organization's activities or to understand the AMA's goals on the specific issue in question.

We probably should admit, too, that many of the Association's pronouncements on socioeconomic issues, if not ill-conceived or ill-timed, at least have not clearly and effectively impressed upon the public or doctors the worthwhile objectives of the organization. Our stand regarding smoking and health, tied in with the claims of the tobacco industries, and our initial opposition to Medicare were misinterpreted by doctors as well as lay people.

The Medical Society of the District of Columbia has been in the forefront of those groups encouraging the AMA to take a realistic approach by helping Congress develop a sound and adequate health care plan patterned after the Federal Employees insurance program. Our Society has been progressive although our views have not always been accepted. It is difficult to write about health care and legislation because of the rapidly changing political approach to health care for the aged by Congress. What is written today may not apply when Congress acts.

As the issue of health care for the aged is finally resolved it will be more important than ever for the AMA, our local Society, and each individual physician to focus public attention on the manifold contributions of organized medicine to the exciting progress in medicine in this country. We physicians and our Society can well be proud of our record.

Paul R. Wilner



EDITORIALS

The Physician and Cancer Research

Dr. Papanicolaou, admiring the fall foliage, found his philosophical mood suddenly transformed into an insight that there was a unity in the process by which trees shed their leaves and man regularly sheds cells from tissues covering the body's surface and from the membranes lining body cavities. From this starting point much research, supported by large grants from the American Cancer Society, led to the "Pap" test, one of the significant advances in the detection and control of cancer. Today, research in subjects ranging from chromosomes to chemotherapy is being carried on under 433 American Cancer Society grants in 167 universities and laboratories. Regularly some research grants come here to the Nation's Capital. The program merits financial support by physicians especially. In addition there are other contributions which they are peculiarly qualified to make individually and collectively to further the wide range of laboratory and clinical research in cancer in the Greater Washington Area.

Dr. Papanicolaou's insight recalls the comment of J. Bronowski: ". . . Does anyone think that a law is found by taking enough readings and then squaring and cubing everything in sight? If he does, then, as a scientist, he is doomed to a wasted life; he has as little prospect of making a scientific discovery as an electronic brain has." Progress in cancer research, as elsewhere in science, is not assured by the inductive, analytical pursuit of knowledge. In the words of Dr. Rene Dubos: "The imaginative speculations of the mind come first, the verification and analytical breakdown come only later. And imagination depends upon a state of emotional and intellectual freedom which makes the mind receptive to the impressions that it receives from the world in its confusing, overpowering, but enriching totality."

The conditions which can produce such receptivity are difficult to sustain. In both clinical and basic cancer research almost every forward step produces refinement of investigations which draw the researcher into ever narrower fields of inquiry. He finds himself excluding more and more, and far from employing a vision of 360 degrees, his field of attention may become a mere slit in the circumference.

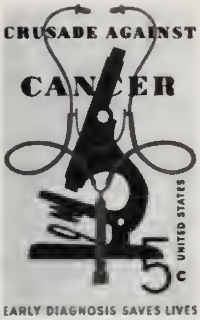
Medical schools, clinics and individuals concerned with cancer research have the opportunity to explore and experiment with new ways to bring to bear on cancer research a multidiscipline perspective. We are being flooded with literature on scientific creativity, but there have been relatively few attempts to formulate systematic programs which might lead to more imaginative dealing with problems in cancer. Yet for cancer research the age of speculation has not passed away. Hence the disciplines which can enlarge the powers of the mind and which can promote wholeness of outlook are likely to be highly useful parts of postgraduate learning. "Like the meridians as they approach the poles," to paraphrase Pierre Teilhard de Chardin, a broad range of disciplines "converge as they draw nearer to the whole."

Creative imagination in cancer research is not something which can be implanted, but it is something which can be valued more accurately, and stimulated. Experimental programs of lectures and seminars would offer a promising approach to the problem of discovering how a man engaged in cancer research may widen his outlook and his access to his own sources of creative imagination. Such programs would best be carried out in a university setting under the aegis of the School of Medicine. They should command serious consideration for financial support by the American Cancer Society Division of the area.

Opinions expressed in contributions to the Editorial Section are those of the writers and do not necessarily reflect the views of the Medical Society of the District of Columbia

At this time of the year, when the American Cancer Society conducts its crusade for funds, as at all other times of the year, it couples its request for financial support with a seeking out from the medical profession of new ways in which to devote its resources to further the work of cancer control.

Leonard J. Emmerglick
President, American Cancer Society,
District of Columbia Division



Commemorative postage stamp issued April 1, 1965, especially appropriate for use during Cancer Control Month

The Woman Who Works

Why do women work? To put it in the proper frame of reference, perhaps the question should be, Why do American women work? Many have no choice—they are single, or widowed, or divorced and without adequate income, or have husbands who can't, don't, or won't provide adequately for the family's needs. Some want to help send their children through college or to help pay off the mortgage on the home, and some simply don't like homemaking and admit it. Others have creative talents and drive that seemingly can't be satisfied only by the role of being a mother and housewife. Age, marital status, and family responsibilities affect the woman's decision to seek employment and as to how long she stays on the job. Around these reasons lies an economic aura that gives recognition to her work.

According to the United States Department of Labor:

- There are more than 23¾ million women in the Nation's labor force. They constitute about ⅓ of the total labor force.
- More than ⅓ of all women of working age are in the labor force.
- One-half of the women who work are 40 years of age or older. The average age is over 44 years.
- Over 30 per cent of all married women are working outside the home.
- Over half of all women workers are married women who are living with their husbands.
- Five million women workers have children between the ages 6 and 17 years only. Almost 3 million women workers have children under 6 years of age.
- The family head is a woman in 4¼ million families.

Our varied and complex economy has created a vast number of new jobs for women. Labor-saving devices and modern conveniences permit smoother functioning of the household in much less time than was formerly possible.

Women have always worked, but where they are working has changed. This has both a physical and emotional impact on the woman. It is not sufficient for us physicians to know simply that a woman works—it is incumbent upon us to find out where she works, what she does on her job, what are her hours of work, how she travels to and from work and how long it takes her, what are the demands made upon her time and energies when she is at home, what is her marital status, and whether she knows why she is working and what satisfactions she gets from work.

As Levinson[1] has pointed out: ". . . The young woman for biological, psychological and cultural reasons is initially and primarily oriented to being a wife and mother. Social changes, however, have narrowed that role and therefore the gratifications which go with it." He points out that this narrowing takes three forms:

Time. Nowadays there are earlier marriages and mothers are younger when their children leave home and the essential feeling of being needed is greatly reduced and missed.

Relationships. Today's kind of world finds that "the husband-wife relationship is narrowed by limitations on shared experiences . . ." and "wives usually carry a heavier burden of responsibility for and tension about the children than the husbands do."

Support. America on the move denies the old importance of neighborhood and community and produces more demanding relationships among parents and children. There are increasing demands and lessening gratifications for the mother.

It would seem, then, that recognition and gratification along with the paycheck help the woman to recover some of her lost needs and to enable her to achieve psychologic balance. It is important that someone depend upon her—not peculiar to the woman, but peculiarly necessary to her now in her changing climate and environment.

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[1] Levinson, H.: Why women work. Think, Nov.–Dec., 1964.

With the increasing numbers of women in our work force, I would urge upon my fellow physicians an increasing awareness of the dual role of the married woman worker, of the problems that are presented by divorce, separation, and widowhood, of the needs of the new worker regardless of her age. This awareness will lead to a better understanding of those emotional and physical problems most peculiar to women. This awareness, too, must recognize that women suffer a greater number of acute conditions throughout their lifetime and have a life expectancy of nearly 7 years more than men. One result of this is more days of confinement to bed and more restricted activity. These are "the facts of life" which I would hope we could improve upon with a resultant better attendance on the job and a greater capacity to do her job well.

The managements of our industries are doing some constructive thinking and taking appropriate action in this area, although progress may seem slow to some. The woman worker also needs the help and guidance of her personal physician so that she may attain and maintain a high degree of emotional stability and vitality. With these, her contributions to our homes, communities and jobs will continue to grow, and from them she will find increasing satisfactions.

R. Lomax Wells, M.D.
General Medical Director,
The Chesapeake and Potomac Telephone Companies, Washington, D.C.

The Committee on Emergency Medical Service

The Committee on Emergency Medical Service is a component of the Council on Communications and Public Service of the Medical Society of the District of Columbia.

It has been delegated the responsibility for developing emergency medical care programs in coöperation with hospitals and other organizations and to represent the Society in matters of civil defense. It is to prepare such informational material and conduct such professional educational programs as seem necessary to prepare Society members for participation in emergencies and civil defense.

Ten years ago members of this committee recognized the community need for the presence of trained and properly equipped physicians at the scene of an emergency or disaster in the District of Columbia. Under the leadership of Drs. Edwin C. Mitchell, James E. Chapman, Arch S. Russell and others a 10-hour course in Emergency and Disaster Medicine was given by the U.S. Army Medical Department in the Medical Society's auditorium. It was well attended, and from this group 40 private physicians were recruited to form a disaster team. They called themselves the MEDS (Medical Emergency and Disaster Service). Each member has been equipped with a foot locker of emergency supplies by the D.C. Health Department, enough to treat approximately 20 casualties. The MEDS have had many practice alerts, but fortunately have never been needed for an actual disaster. However, they were utilized in aid stations along the line of march of the "Freedom Marchers" in August 1963, and were on standby alert during the Inaugural Ceremonies in January 1965. The group has gradually dwindled to 15 members who carry their foot lockers in their cars at all times. A new course in Emergency and Disaster Medicine is planned for this fall. Recruits are needed. Those who are interested should contact this Committee.

The Executive Board of our Medical Society recently assigned this Committee the task of improving the public image of the practicing physicians in Washington in regard to the emergency care of our citizens. It was suggested that this be accomplished by (1) publicizing the work of the Medical Bureau, (2) requesting local hospital administrators to screen patients who seek admittance to their Emergency Rooms and to refer nonemergencies to their private physicians, and (3) requesting that members of the Medical Society coöperate by taking emergency calls from patients to whom they are obligated and responsible. Plans are under way to study these problems jointly with the Hospital Council of the National Capital Area, the Medico-Chirurgical Society of the District of Columbia, the legal counsel for the Medical Society, and the Committee on Liaison with Medical Schools and Hospitals of the D.C. Medical Society.

Members of our Committee attend regional and national meetings on Emergency and Disaster Medicine. With the benefit of knowledge gained from disasters and alerts elsewhere your Committee on Emergency Medical Service hopes to stimulate and aid local agencies in providing the Nation's Capital with the best possible assistance in case of disasters, regardless of their size.

John W. Latimer, Jr., M.D.
Chairman, Committee on Emergency Medical Service

D-Penicillamine in Cystinuria Control

Without engaging in the basic mechanisms of intestinal absorption and renal tubular metabolism of cystine it seems appropriate to bring to general attention the fact that urinary output of cystine in cystinurics may now be reduced from 300 to 500 mg. or more to less than 100 mg. per day by the administration of 2 Gm. of d-penicillamine. This accomplishment has resulted in cessation of cystine stone formation in the patients who have taken d-penicillamine.

The possible toxic reactions reported during 8 years of treatment of Wilson's disease with penicillamine, although rare, consist of bone-marrow depression, the nephrotic syndrome, fever, serum sickness type reactions, cutaneous eruptions, and possibly cataracts. There is also a possibility of pyridoxine antagonism which can be controlled by giving 50 mg. of pyridoxine a day. Dr. Frederic C. Bartter, Chief of the Clinical Endocrinology Branch of the National Heart Institute, and his associates at the National Institutes of Health have treated 5 patients with symptomatic cystinuria uncontrolled by conventional medical therapy with d-penicillamine for periods from 16 to 20 months. The cystine level has been maintained below 100 mg. per day, no new stones have formed, crystalluria has ceased, and toxicity has been minimal.

The above data are presented as a subject of practical therapeutic news in a field of more than moderate frustration.

Note: The above information was taken from a symposium at the National Institutes of Health.

William P. Herbst, M.D.
Clinical Professor of Surgery (Urology) Emeritus, Georgetown University School of Medicine

Report on Special Meeting of AMA House of Delegates*

The recent Special Meeting of the House of Delegates of the American Medical Association was attended by over 95 per cent of the delegates.

The purpose of the meeting was (1) to consider pertinent items relating to current national health legislation, including but not limited to policy concerning health care for the needy, and (2) to consider adequate support for the educational, scientific, and other programs of the American Medical Association.

Since the meeting in Miami in December there have been a number of sessions of the Board of Trustees, the Councils on Medical Service and Legislative Activity, and the Task Force on Care for the Elderly to formulate plans which would be worth while from the standpoint of the patients and of the physicians. The Special Meeting of the House was to consider the results of such planning.

In acting on the reports from the Board and the Councils together with 6 resolutions which were introduced, the House gave unanimous approval and support to the AMA Eldercare Program and the Herlong-Curtis Eldercare Bill (H.R. 3727), which embodies the basic principles of the AMA program. These would encourage the use of voluntary health insurance or prepayment plans in the implementation of Kerr-Mills programs, permit the state to have a health-oriented agency to supervise or administer the program, provide for the use of an income information statement as the sole eligibility test of need, and provide for a wide spectrum of medical, surgical and hospital benefits with sliding-scale eligibility, so that a citizen 65 and over would pay all or none of the cost of the prepayment policy depending on his income.

The House also:

1. Reaffirmed its opposition to the King-Anderson Bill (H.R. 1 and S.1) and all similar measures.

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* This report summarizes the actions taken by the House of Delegates of the American Medical Association at a Special Meeting held in Chicago, February 6 and 7, 1965.

M. P. Mecanko—District of Columbia

E. G. Copeland—District of Columbia

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2. Commended the Board of Trustees and its Task Force for implementing and funding a program of public education on the AMA Eldercare Program.

3. Called for a study of the "durability and feasibility of extending the principle of Federal and state aid under the Kerr-Mills principle to persons below the age of 65 who may need help."

4. Adopted a statement on standards for Health Care Programs.

5. Urged that the professional services of pathologists, radiologists, physiatrists and anesthesiologists be excluded from the provisions of any bill which excludes other physicians' services.

In the discussion relative to the funding of the public education program it was brought out that this would be accomplished from the financial reserves of the AMA and that no assessment on members or increase in dues would be necessary and was not contemplated. The program is to be conducted from the national to a local level.

Your delegates, while not as enthusiastic about the probability of success of the Eldercare Plan as was the rest of the House, supported in general the program and policies which were adopted. While they were pleased to note the change in attitude since the meeting of the House of Delegates in Miami in December 1964, your delegates believe that the change came too late to have significant bearing on the health legislation pending in Congress.

Respectfully submitted,
Raymond T. Holden, M.D.
C. Willard Camalier, Jr., M.D.
Delegates

Medicolegal Abstracts

A case was tried recently in New York in which the decision rested largely upon house officers' responsibility. This was an appellate court decision.

A patient had a fever 3 days after cesarean section and was given antibiotics. Three days later, with a temperature below 100°, she complained to a nurse of soreness in the upper jaw and difficulty in opening her mouth. A resident saw her for the same complaint 3½ hours later (7:30 p.m.). She was treated palliatively.

The following morning her physician saw her on rounds, listed several diagnostic possibilities, and administered 3,000 units of tetanus antitoxin on the long chance that she might have that disease. He called in 6 other doctors, all of whom considered tetanus only a remote possibility. (They knew of no previous reports of this disease following cesarean section.) The attending physician did, nevertheless, give another 1,500 units of antitoxin the same day and 50,000 units the following day. She died 8 hours after the last injection with a final diagnosis of tetanus.

The patient's husband sued both the doctors and the hospital. The court ruled that the doctors could not be considered to have been negligent, particularly since they began treating her for tetanus even while considering it an extremely unlikely diagnosis.

There was evidence that untreated tetanus is fatal in 24 hours. The jury was allowed to decide whether the 18-hour delay in starting treatment was a competent cause producing her death. The court held that the hospital was negligent in not notifying the doctor sooner about the initial symptoms.

The dissenting judges pointed out that the diagnosis would probably not have been made even if it had been reported sooner. Indeed, it was entertained only as an unlikely chance by her attending physician and his consultants even though they had the advantage of observing all developments since the resident saw her. The chance of the house officer recognizing this as a symptom of tetanus seemed to them extremely remote. Nevertheless, the majority decision was against the hospital.

Comment: This case prompts us to reflect upon the difficult questions of limitation of a house officer's responsibilities. How much diagnosis and treatment should he attempt alone? At what point is he to call the attending physician? The case itself is an unhappy curiosity, unlikely to recur. Similar circumstances involving other diseases may arise, however.

M-L

In Washington, D.C., a physician's license was revoked by a court after he was convicted of attempted abortion. The physician later asked the court to vacate that order so he might apply for a new license with the Commission on Licensure.

The court denied this petition, pointing out that if it did vacate the revocation the physician would be able to practice immediately. This would amount to the court's determining that he was fit to practice medicine again. That matter is within the jurisdiction of the Commission.

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**Tainter, M.L. and Buchanan, O.H., Ann. N.Y. Acad. Sc. 54:438, 1954*

The court also said that it is not necessary for the revocation to be vacated before applying for a new license. The Commission has the power to entertain and pass upon the merits of an application for restoration of the right to practice medicine.

Comment: It is interesting that the court indicated that the Commission has the power to override the court's revocation order by granting the physician the right to reopen his practice. The court did not advise the Commission as to whether the application should be granted or denied.

M-L

The *Citation* (the AMA's biweekly digest of recent medicolegal decisions) of February 15, 1965, reported 29 cases involving drunken driving, most of them referable to the various tests for alcohol in the blood, urine, or expired air. Most of the decisions indicated the following general trends in utilizing these tests and the new laws involving "implied consent."

The test results can be properly admitted as evidence without violating the privilege against self-incrimination. This is true if the person at trial consented to the test. In Texas it was further determined that consent need not be in writing.

Testimony surrounding admission of the test results must include specific indication that the blood tested was, indeed, that drawn from the patient. The courts recognize the possibility of a blood sample's being lost, mixed up with that from another person, or mislabeled.

Several states have reaffirmed the principle that intoxication can be demonstrated sufficiently firmly to support a conviction without the chemical tests. This has strengthened the case against drivers who refuse the tests, particularly in those states which provide for revocation of the driver's license if he refuses to take the test.

Robert R. Montgomery, M.D.

Health Dept. Notes

The Rheumatic Fever Program for Washington

A program for secondary prevention of rheumatic fever and its complications has been operational in the District for the past year. It is supported by a community health grant from the U.S. Public Health Service through March, 1967.

The project concerns District residents who have or have had rheumatic fever or rheumatic heart disease. The first phase has begun with building a central registry of all known cases since January 1, 1959. The registry is being built from cases reported by this Department and its clinics, from records of the 6 larger Washington hospitals, and from cases seen by private physicians (and used with physician approval).

This first phase also includes a follow-up service to ensure that persons on the registry remain under medical supervision. Registered patients who have not attended clinics within 6 months will receive this follow-up attention. Drugs will be provided for secondary prophylaxis to indigent and medically-indigent patients on the registry, an adult clinic (for the medically-indigent) will be offered at the Northwest Central Clinic, and there will be increased health education regarding rheumatic fever for lay and professional groups in D.C.

Phase 2 of the project features a later study of 100 cases selected at random where the patient discontinued prophylaxis and has been lost from medical supervision. This group will be compared with 100 supervised patients to determine motivation (or its lack) as a factor in continuing supervised prophylaxis.

The rheumatic fever project operates from the Chronic Disease Division of the Northwest Central Clinic.

There has long been a need for an organized approach to rheumatic fever in Washington. From 1959 to 1964 more than 400 patients under age 21 were treated for acute and chronic rheumatic fever at D.C. General Hospital. Most of these were lost to follow-up after discharge from the Crippled Children's Unit there.

From 1957 to 1964 more than 700 patients were treated at Children's Hospital for rheumatic fever or rheumatic heart disease. Again, most of these have unknown status after discharge.

It is known that readmission rates for recurrence of the disease is high. Again, at D.C. General's Crippled Children's Unit (in 1959) there were 21 new cases and 12 recurrences of this disease. Other hospitals in Washington have reported similar experiences, both inability to follow the patient's status and a high readmission rate on recurrence.

The registry will accumulate names of rheumatic fever patients seen in selected clinics and

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hospitals since 1959. Those who have been lost to follow-up will be visited at home to determine their present disease status. They will be encouraged to return to their original clinic or to the Department's Northwest Central facility. Indigent patients will be offered Health Department assistance in their care.

It is anticipated that some 3,000 patients will form the registry when it is fully established. Patient data, histories and records will be coded and tabulated for easy access and reference.

Project staff members will make frequent visits to originating clinics and hospitals to keep the registry current. They will also encourage these clinics to forward throat cultures on possible new or recurrent cases to the Department's laboratories, where rapid diagnosis using fluorescent antibody tests will aid both the patient and the physician.

Public and professional health education is an important part of the rheumatic fever program and educational activities will be arranged in conjunction with the D.C. Medical Society and the Washington Heart Association.

Murray Grant, M.D., D.P.H.
D.C. Director of Public Health

A Locket for Margaret Mary

Dr. Margaret Mary Nicholson is wearing with pride a gold locket which she received recently from the Medical Staff of Children's Hospital, but she will never really need it to remind her of the 36 golden years of loyal and devoted service which she has given to the Hospital. For on the distaff side, Dr. Margaret Nicholson is Children's Hospital. Her long service there goes back to 1929.

DR. MARGARET M. NICHOLSON receives a locket in appreciation for her long service to Children's Hospital from Dr. Milton M. Greenberg, Chairman of the Medical Staff.

On March 1, at the Annual Dinner of the Medical Staff, Dr. Milton M. Greenberg, Chairman, presented her in behalf of the members the locket as a token of their affection. She also received a Certificate of Merit "in sincere appreciation for the years of loyal service" and in honor of her appointment to the Senior Advisory Staff.

Others honors and many "firsts" have already come to Dr. Nicholson. She was the first woman intern at St. Francis Hospital (University of Pittsburgh) where she trained for a year following graduation from George Washington University School of Medicine in 1925. She received the Certificate of Meritorious Service from the Medical Society of the District of Columbia in 1956 and the Award of Merit from the George Washington University Medical Society in 1954, the first woman so honored by both organizations. She organized and headed the first cardiac clinic in Washington. She became the first woman to serve as Senior Attending Physician at Children's and the first woman to serve as Chairman of the Section on Pediatrics of the American Medical Association.

Following the presentation to Dr. Nicholson, the dinner guests heard Dr. Albert B. Sabin, of Cincinnati, world-renowned virologist and developer of the oral polio virus vaccine, deliver the Sixth Annual Edgar P. Copeland Memorial Lecture. He spoke on "The Possible Role of Viruses in Human Cancer."

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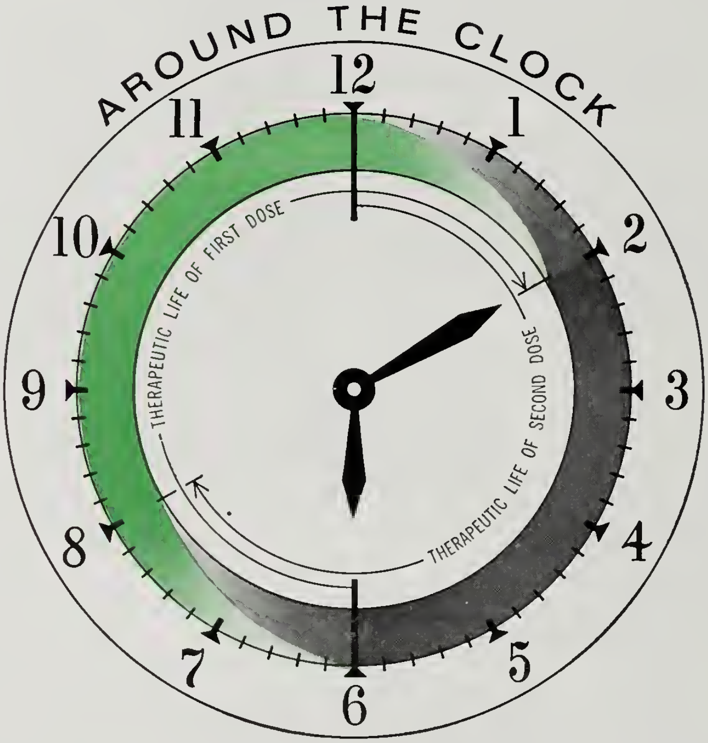
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NEWS & PERSONALS

Summary of Executive Board Actions

The Executive Board of the Medical Society of the District of Columbia held its regular meeting, February 15, 1965 in the Society's building. The Chairman, Dr. Duane C. Richtmeyer, presided. Present were Drs. C. Willard Camalier, Jr., Robert J. Coffey, Karl C. Corley, Darrell C. Crain, J. Spencer Dryden, Raymond T. Holden, Kenneth L. McCoy, Edward W. Nicklas, Paul R. Wilner; Mr. George W. Cooley, Secretary, and Mr. Warren Magee, the Society's legal counsel. The Chairman called the meeting to order at 7:30 p.m.

Committee Meetings: The Secretary reported that the following meetings had been held since the last meeting of the Board:

January	19	Committee on Alcoholism
	19	Grievance Committee
	25	Program Committee—Scientific Assembly
	26	Committee on Public Information and Education
	28	Presentation of bids for new Society headquarters
	29	Liaison Committee with Public Health Department
February	1	Committee on Medicolegal Problems (and guests)
	2	Special meeting of Executive Board and House Committee re bids on new building
	5	Fee Review Committee
	9	Special meeting with contractor re bid submitted
	10	Finance Committee
	11	Liaison Committee with Public Health Department
	11	Committee on Environmental Health

Board of Credentials: The Executive Board approved the following recommendations of the Board of Credentials.

Active Members

Philip Louis Calcagno, Georgetown University Hospital
Clyde Litton, 915–19th Street, N. W.
George Joseph Lucas, 5502 Maxwell Drive, Camp Springs, Md.
Judson Graves Randolph, Children's Hospital
Bruce Henry Sklarew, Howard University
Bahman Teimourian, 2700 Q Street, N. W.
Albert Eugene Tompkins, 4222–17th Street, N. W.
Thomas James Waters, Georgetown University Hospital

Associate Members

Lawrence Joseph Eanet, 50 West Edmonston Drive, Rockville, Md.
Michael M. Edelstein, U. S. Naval Dispensary

Resident-Intern Member

Oreste Rossi, Doctors Hospital

Transfers

Active to Associate: Albert S. Bright, C. David Cooper and Charles F. Hill
Active to Special: Francis W. Dunne
Associate to Active: Dale C. Cameron

Resignation

Associate: Harold A. J. Wiedemann

Remission of Dues

Active: John C. Murphy
Associate: Robert B. Hightower

Finance Committee: The Chairman reported on a number of details relating to transfer of funds within the Society accounts, all of which were approved by the Board. It was voted to approve payment of 1965 dues for the following: Washington Board of Trade, Joint Board on Science Education, and the National Society for Medical Research.

Progress on New Building: Mr. Magee reported on the status of the property tax case re 2005-07-09 Eye Street, N.W. He also reported that the excavation permit had been obtained and that the final permit was expected shortly, following which the contract with Skinker and

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1. Stoll, L. J.: The Use of Trifluoperazine ['Stelazine'] in General Practice, M. Press *243*:578 (June 29) 1960.

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Garrett will be completed and construction started.

The Secretary reported on the damage to 1718 M Street, N.W. caused by the adjacent excavation. Messrs. M. Diener and I. Bimblick have been notified by the City to repair the damage.

The Secretary reported on the arrangements for financing the construction of the new building and the schedule for receipt of payment from the sale of present property.

Report of Delegates to AMA: The Board accepted a report (see page 185) from Drs. Holden and Camalier on the Special Session of the House of Delegates in Chicago, February 6 and 7, 1965, which was devoted to consideration of AMA policy on medical care for the aged.

It was agreed to participate in the AMA Eldercare Program up to a maximum of $2.50 per member. The Society funds would come from general revenue and not from a special assessment.

1966 Scientific Assembly: The Secretary reported that arrangements were under way for the Society to coöperate with the Southern Medical Association in 1966 instead of holding its own SCIENTIFIC ASSEMBLY that year.

Fee Review Committee: The draft of a guide for the organization and operation of this Committee was approved and referred to the Fee Review Committee.

Proposed Revisions in the 1959 Relative Value Scale: These were reviewed and referred to the new Relative Value Study Committee.

Public Relations and Publicity: Suggestions in reference to publicity regarding actions taken by the Executive Board and committees were made by Dr. Crain and were referred to the Committee on Public Information and Education.

Reorganization of Obstetrical Board: A detailed proposal for the reorganization of the present Obstetrical Board, submitted by Dr. C. K. Fraser and the Board members, was approved. The Board also voted to express its appreciation to Dr. Fraser and Dr. J. Bay Jacobs for their long and untiring services in the field of obstetrics and for the studies undertaken by the Obstetrical Board.

Section on Obstetrics and Gynecology: A proposal to form a new Section on Obstetrics and Gynecology was considered and referred to the Council on Specialty Sections.

Other items discussed included: (a) a letter from Dr. William P. Herbst regarding the Department of Public Health; (b) a letter from Dr. James E. Boland in reference to conversion factors used by Medical Service of the District of Columbia; (c) the problem of reviewing the agreement with the Police Department for special parking privileges for physicians; and (d) a reply to an inquiry made by the Executive Board regarding the United Planning Organization not having adequate medical representation.

It was agreed that the next meeting be held March 22, 1965 at 6 p.m.

DR. JAMES A. KNIGHT, Associate Dean of Tulane University School of Medicine, as he delivered one of the two principal addresses which constituted the Fourth Annual Davidson Lecture on Religion and Medicine, December 9, 1964. His lecture appears on page 161.

Meetings

A Contemporary Conference on the Social Responsibility of Gynecology and Obstetrics is scheduled for Friday, May 7, at Hurd Hall, The Johns Hopkins Hospital, in Baltimore. This will be an all-day meeting beginning at 9:30 a.m. and closing at 5:00 p.m., with a luncheon period from 12:30 to 2:00 p.m.

The subjects to be discussed are timely and provocative. The morning session will be devoted to such topics as "The Quantity of the Next Generation—The Population Explosion," "The Quality of the Next Generation," and "The Control of Neoplasia." Many of the speakers are top

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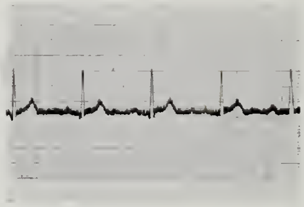

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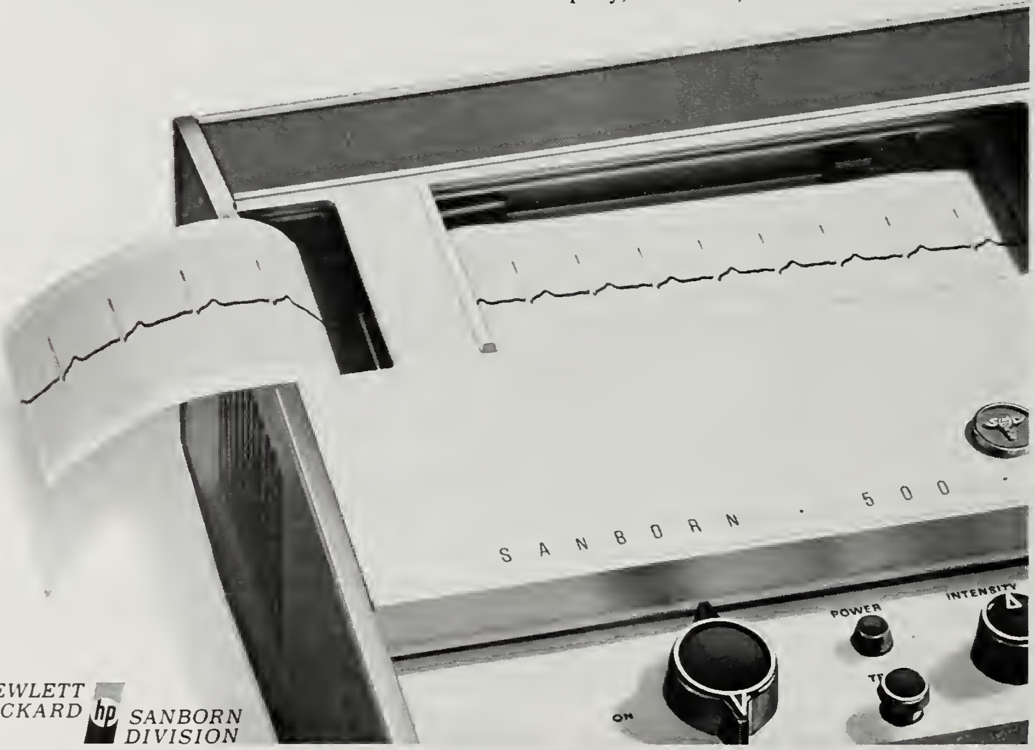

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The afternoon will be concerned with such social problems as divorce and abortion and the laws which apply; adoption and welfare agencies; and the psychologic and family impact of the diseases peculiar to women. Dr. John Romano, Professor and Chairman of the Department of Psychiatry, University of Rochester School of Medicine, will be the final speaker; his subject, "Educating the Physician for His Role."

Washington physicians are cordially invited to attend this Conference.

The Joint Meeting of the Washington Society of Pathologists, the Southeastern Region of the College of American Pathologists, and the Pathology Section of the Baltimore City Medical Society will be held on May 15 in Dart Auditorium at the Armed Forces Institute of Pathology.

A seminar on "Diagnostic Problems in Neuropathology" will be conducted by Dr. Kenneth Earle, Chief of the Neuropathology Branch, AFIP. The cases chosen for this seminar represent difficult diagnostic problems of the type that are sent for consultation. Most of the cases are non-neoplastic or represent a problem in differentiating between neoplasms and reactive changes.

Sets of slides and clinical histories may be obtained by mailing a check or money order in the amount of $15.00 to Dr. Abner Golden, Secretary-Treasurer, Washington Society of Pathologists, Georgetown University Hospital, 3900 Reservoir Road, N. W., Washington, D. C. 20007.

A Postgraduate Course in Pediatrics entitled "Surgical Decisions for the Pediatrician" will be presented, May 19, 20 and 21 at the Children's Hospital in Washington, D. C. Specialists in various fields related to pediatrics will be present to discuss surgical questions which the pediatrician faces daily.

For information and registration please write: Postgraduate Course, Children's Hospital of the District of Columbia, 2125-13th Street, N.W., Washington, D.C. 20009.

Personals

Dr. Charles A. Hufnagel, Professor of Surgery at Georgetown University, **and Dr. John B. Johnson,** Professor and Chairman of the Department of Medicine at Howard University, are recipients of the Susan and Theodore Cummings Humanitarian Awards of the American College of Cardiology.

1965 Kober Lecture

Auditorium, Gorman Diagnostic and Research Building
Georgetown University Medical Center

Wednesday, April 21, 1965 – 8 P.M.

Speaker:

Sol Katz, M.D., F.A.C.P.

Professor of Medicine
Georgetown University School of Medicine

Subject: "Doubts in the Shadows: The Physician and the Chest X-ray"

Admission Free

Dr. Anthony Zappala was elected Chairman of the Washington, D. C. Area Council on Alcoholism on February 17, succeeding Attorney Frank S. Ketcham. **Dr. Sanford L. Billet** was reelected Secretary. Physicians newly elected to the Board were **Dr. Clarence E. Bunge and Dr. Edward C. Mazique.**

Three members of the D. C. Medical Society were honored for community services by the Lt. Harold E. Greenberg Post 692 of Jewish War Veterans. The Leo Beldock Humanitarianism Awards went to **Dr. William B. Walsh,** for his founding of Project Hope; to **Dr. Marvin C. Korengold,** for his leadership last year in the Metropolitan Washington poliomyelitis immunization program; and to **Dr. Stanley I. Wolf,** for coördinating the same program in the Greater Silver Spring area. The presentations were made at the Annual Awards breakfast, March 7, at the Washingtonian Motel in Gaithersburg, Md.

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The appointment of **Lt. General Leonard D. Heaton** as Surgeon General of the Army has been extended by President Johnson to December 1, 1966. This is the second time General Heaton has received an extension of office since his original appointment in June 1959.

Dr. Luther L. Terry has been reappointed Surgeon General of the Public Health Service for another 4-year term.

President Johnson also nominated his personal physician, **Rear Admiral George G. Burkley**, for promotion to Vice Admiral.

These physicians are Honorary members of the D.C. Medical Society.

Dr. Herber P. Ramsey has been reappointed Chairman of the Legislative Committee of the American College of Obstetricians and Gynecologists, effective May 1.

Dr. Ralph G. Beachley, Director of Public Health of Arlington County, Va., will retire, July 1. He will be succeeded by Dr. Stanley P. Mayers, Jr., who is Assistant Dean and Assistant Professor at Johns Hopkins University School of Public Health.

In July Dr. Beachley will have completed 27 years of service as Director of the County's Department of Health. He is a graduate of George Washington University School of Medicine (Class of 1920) and was commissioned in the Public Health Service in 1921. He received his degree as Doctor of Public Health from the University of Georgia in 1926. He has been Professor of Public Health Administration at George Washington University since 1938, and 2 years ago was designated Professor Emeritus.

Under his direction the Public Health Department has grown from 6 to more than 100 employees. The Department has received numerous Federal grants and most recently completed a new building to house the Mental Hygiene Clinic.

Dr. Beachley has been an Associate member of the D. C. Medical Society since 1942.

Among the faculty members of the School of Medicine at Georgetown University who received promotions recently were: **Drs. Sol Katz and Thomas F. Keliher**, to Professors of Medicine; **Dr. Joseph F. O'Rourke**, to Professor of Surgery (Ophthalmology); **Drs. Peter C. Luchsinger, Modestino G. Criscitiello, Robert F. Donohoe, and Paul R. McCurdy**, to Associate Professors of Medicine; **and Dr. John F. Potter**, to Associate Professor of Surgery.

Dr. Reginald G. James, Medical Officer at Junior Village, was elected Chairman of the Public Health Advisory Council, February 23.

Obituaries

Henry Anatol Monat, A.B., M.D., F.A.C.P.

(1902–1965)

Dr. Henry A. Monat, well known Washington gastroenterologist, died, January 25, 1965 at Georgetown University Hospital. His offices were at 1028 Connecticut Avenue, N.W.

Dr. Monat was born in Lodz, Poland, June 24, 1902 to William Basil Monat, a physician, and Salomea Kozlowska Monat. He received his early education in England and France.

Dr. Monat graduated from the University of Paris in 1923 and from the University of Missouri in 1925. He received his medical degree from the University of Arkansas in 1929. He interned at Gorgas Hospital in Panama the following year, then served various residencies in Europe from 1930 to 1932; he became fluent in many languages. He was associated with Veterans Administration hospitals from 1932 to 1935.

During World War II he served with the Navy Medical Corps in Iceland, where he established a hospital for the Naval Air Fleet. He was a medical officer on the *U.S.S. Guadalcanal* when the ship took the only German submarine captured during the War. From his interrogation of the U-boat crew, for which he received the Presidential Unit Citation, he learned the location of the German mine fields off the coast of Normandy just before the Allied invasion. After his duty on *Guadalcanal* he served for the remainder of the War as Chief of the Gastroenterological Department at St. Albans Hospital on Long Island. He held the rank of Captain.

He was Associate Clinical Professor of Medicine at Georgetown University from 1946 to 1954, and during this same period he was Chief of the Gastroscopic Clinic at the University Hospital.

A specialist in gastroenterology, he was certified by the American Board of Internal Medicine. He was a Fellow of both the American College of Physicians and the American College of Gastroenterology, serving as Governor of the latter for the District of Columbia. He was elected to Active membership in the Medical Society of the District of Columbia in 1936. He was a member of the American Medical Association, the Nutrition Society of Great Britain, and the Pan American Medical Society.

He leaves his wife, Mrs. Anna Hurwitz Monat, who resides at the home address, 2539 Waterside Drive, N.W.

Laurence Lee Cockerille, M.D.

(1901–1965)

Dr. Laurence Lee Cockerille, Washington obstetrician and gynecologist for 40 years, died at his home, January 27, 1965.

Dr. Cockerille, a Washingtonian, was born, June 19, 1901, to Samuel Johnstone Cockerille, Jr., a dentist, and Marie McWhorter Cockerille. He attended Washington schools and was a graduate of old Central High School. After 2 years of premedical study at Hampden-Sydney Institute, he enrolled at George Washington University School of Medicine, graduating in 1925. He interned at Providence Hospital the following year and took resident training at Columbia Hospital for Women from 1926 to 1927.

Dr. Cockerille maintained offices at 1801 Eye Street, N.W., and in Bethesda at 8218 Wisconsin Avenue. He was on the staff of Geroge Washington University Hospital, a member of the senior staff of Columbia Hospital for Women, and a consultant in obstetrics and gynecology at Sibley and Suburban Hospitals.

He was elected an Active member of the Medical Society of the District of Columbia in 1929. He was a diplomate of the American Board of Obstetrics and Gynecology, a member of the American Medical Association, and a life member of the Southern Medical Association. He was also a member of the Washington Gynecological Society and the Pan American Medical Society.

Surviving him are his wife, Mrs. Katie Hern Cockerille, of the home address, 4709 49th Street, N.W., and a son, Dr. Laurence Lee Cockerille, Jr., of Cleveland, Ohio.

John Raymond Raedy, B.S., M.D.

(1906–1965)

Dr. John Raymond Raedy, who practiced in Washington since 1933, died suddenly, January 27, 1965 at his home.

Dr. Raedy was born in Washington, D. C., August 16, 1906. He attended Gonzaga High School and graduated in medicine from Georgetown University in 1932. He interned at Providence Hospital and continued to serve on the medical staff of Providence until his death. He was engaged in general practice with offices at his home, 3701 Leland Street, Chevy Chase, Md.

Dr. Raedy was elected an Active member of the Medical Society of the District of Columbia in 1937. He was a member of the American Medical Association, a Fellow of the American College of Chest Physicians, and a member of the Georgetown Clinical Society.

He leaves his wife, Mrs. Sara Thornby Raedy; a son, Raymond, and 2 daughters, Sarah Eileen and Mary Lynne, all of the home address.

Gilbert Britt Rude, M.D.

(1908–1965)

Dr. Gilbert B. Rude, who had practiced medicine in Washington since 1935, died, January 27, 1965 at his home, 3900 Military Road, N.W., where he also maintained his offices.

Dr. Rude was born in Washington, D. C., November 22, 1908 to Gilbert T. and Viola Mae Rude. He graduated from old Central High School and then attended the University of Maryland. He received his medical degree from George Washington University in 1934 and interned the following year at Garfield Memorial Hospital.

Dr. Rude had been an Active member of the D. C. Medical Society since 1938. He was a member of the American Medical Association and a member and Past President of the Medical Arts Society. At his social club, the Columbia Country Club, he indulged in his favorite sport, tennis, and also served on the Club's Board of Governors. He was a member of All Saints' Episcopal Church.

Surviving him are his wife, Mrs. Margaret Ann

Rude; a son, Gilbert E. Rude, of 2603 Ross Road, Chevy Chase, Md.; and a daughter, Julia Ann Rude, a student at the University of Maryland.

Clarence Lee Miller, M.D.

(1905–1965)

Dr. Clarence L. Miller, practicing physician since 1939, died, January 29, 1965, at George Washington University Hospital.

Dr. Miller was born in Monmouth, Illinois, December 31, 1905, to Henry and Hattie May Miller. He received his degree from the University of Maryland School of Medicine in 1938 and interned for a year at Baltimore City Hospital. From 1942 to 1946 he served with the U. S. Army Medical Corps, and for over a year was attached to the 137th General Hospital in Great Britain. He was discharged with the rank of Major.

Dr. Miller was Chief of Medical Service at the U. S. Soldiers Home Hospital. He had courtesy privileges at other Washington hospitals.

He was elected to Active membership in the Medical Society of the District of Columbia in 1940. He was a member of the American Medical Association and the Southern Medical Association.

He leaves his wife, Mrs. Hope Ridings Miller, of 1868 Columbia Road, N.W.

Joseph Scott Webster Thomas, B.A., M.D.

(1907–1964)

Dr. Joseph S. W. Thomas, an Active member of the D. C. Medical Society, died, December 23, 1964. He maintained his offices at 1235 S Street, N.W., and lived at 641 Columbia Road, N.W.

Dr. Thomas was born to the Reverend William H. Thomas, Sr. and Margaret Emily Thomas in Newport, R. I., February 24, 1907. He received his early education in Denver, Colorado and Baltimore, Md. He graduated from Lincoln University, Pa., in 1930 and from Howard University College of Medicine in 1935. He interned at Freedmen's Hospital the following year.

Dr. Thomas practiced in New Jersey and Virginia before he opened his offices in Washington in 1939. He was elected to Active membership in the Medical Society of the District of Columbia in 1955.

His mother survives him together with a sister, Miss Margaret E. Thomas, both residing at 641 Columbia Road, N.W.

Jesse Bruce Hopkins, M.D.

(1909–1965)

Dr. Jesse B. Hopkins, general practitioner in Washington for many years, died at his home, 700 East Capitol Street, where he also maintained his offices, February 9, 1965.

Dr. Hopkins, a native of York County, Virginia, was born, July 14, 1909. He graduated from the Medical College of Virginia, Richmond, in 1933 and interned at the Hospital Division of the College the following year.

He practiced in Wise County, Va., for a year and for 10 years in Bridgewater, Va. From 1947 to 1953 he was chief of professional services at the Fort Myer Clinic. He began his Washington practice in April 1949.

He became an Active member of the D.C. Medical Society in 1950. He was a member of the American Medical Association and the Southern Medical Association.

Surviving him are his wife, Mrs. Margaret A. Hopkins, of the home address, and a son, J. Bruce Hopkins, Jr., of 12224 Valleywood Drive, Wheaton, Md.

Recent Advances in Psychosurgery—Freeman

(Continued from page 160)

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Sex in Today's Culture—Knight

(*Continued from page 165*)

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Surgery for Outstanding Ears—Letterman et al

(*Continued from page 172*)

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Medical Staffing of Emergency Rooms—Beaven

(*Continued from page 176*)

in automobiles, techniques for instant recognition of various poisons in gastric aspirates, and many others. Indeed, in problems of the dying patient refinements in techniques of resuscitation, preventive health and accident measures, national and community disaster planning, and many others fall uniquely to the responsibility of those in the specialty practice of emergency surgery.

Summary

A preliminary report of a year's experience with a medical group program in the Emergency Department of a hospital has been presented. The relationship between the members of the E.R. Medical Group and the hospital, area physicians, hospital house staff, and the patients under their care has been described. The potentiality for a new subspecialty of clinical medicine has been briefly outlined.

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Washington, D. C. 20003

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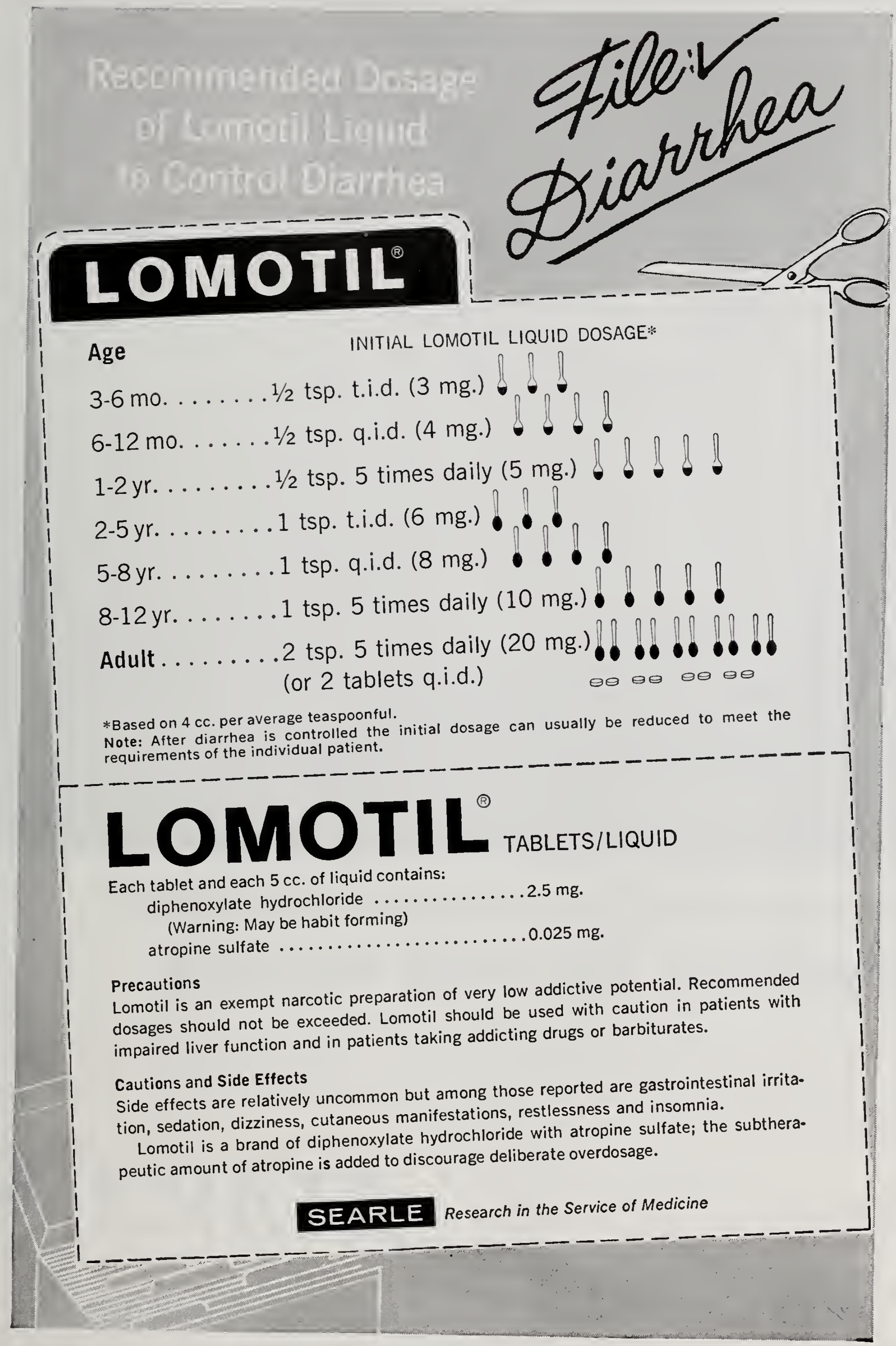

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NATIONAL AND REGIONAL MEETINGS

April 26–29: Aerospace Medical Association. New York Hilton Hotel, New York. Address: Dr. William J. Kennard, *Executive Vice President*, Washington National Airport, Washington, D. C. 20001

April 26–29: American Academy of Pediatrics. Americana Hotel, Bal Harbour, Fla. Address: Dr. E. H. Christopherson, *Executive Director*, 1801 Hinman Avenue, Evanston, Ill. 60204

April 26–May 1: American Academy of Neurology. Sheraton Cleveland Hotel, Cleveland. Address: Mr. Thomas D. Swedien, *Executive Secretary*, 7100 France Avenue South, Minneapolis, Minn.

May 2: American Federation for Clinical Research. Haddon Hall, Atlantic City, N. J. Address: Mr. James E. Bryan, *Executive Secretary*, 2000 P Street, N.W., Washington, D. C. 20036

May 3–7: American Psychiatric Association. Americana Hotel, New York. Address: Mr. Robert L. Robinson, 1700 18th Street, N.W., Washington, D. C. 20009

May 10–12: Association of Surgeons of the Southern Railway System. Sheraton-Park Hotel, Washington, D. C. Address: Dr. J. Marsh Frere, Sr., Secretary, 705-9 Walnut Street, Chattanooga, Tenn.

May 20–22: American Gynecological Society. Americana Hotel, New York. Address: Dr. C. J. Lund, *Secretary*, 260 Crittenden Blvd., Rochester, N. Y. 14620

May 27–29: American Ophthalmological Society. Homestead Hotel, Hot Springs, Va. Address: Dr. Samuel D. McPherson, Jr., *Executive Secretary*, 1110 West Main Street, Durham, N. C.

June 15–19: American Medical Women's Association. Philadelphia. Address: Mrs. Gertrude F. Conroy, *Executive Secretary*, 1790 Broadway, New York, N. Y. 10019

June 17–20: American Therapeutic Society. Essex House, New York. Address: Dr. Oscar B. Hunter, Jr., *Executive Secretary*, 915 19th Street, N. W., Washington, D. C. 20006

June 17–21: American College of Chest Physicians. Waldorf-Astoria Hotel, New York. Address: Mr. Murray Kornfeld, *Executive Director*, 112 East Chestnut Street, Chicago, Ill. 60611

June 19: American Association for the Study of Headache. New York Hilton Hotel, New York. Address: Dr. Lester S. Blumenthal, *Chairman*, 5315 Connecticut Avenue, N. W., Washington, D. C. 20015

June 20–24: American Medical Association. Americana Hotel, New York. Address: Dr. F. J. L. Blasingame, *Executive Vice President*, 535 North Dearborn Street, Chicago, Ill. 60610

BOOKS RECEIVED

Acknowledgment is made of the following books which have recently been received.

Current Practice in Orthopaedic Surgery, volume 2. John P. Adams, B.S., M.D., F.A.C.S., Editor, and 13 Contributors. Price, $13.50. Pp. 231, with 126 illustrations. St. Louis: Mosby, 1964.

Respiratory Function in Disease. An Introduction to the Integrated Study of the Lung. David V. Bates, M.D. (Cantab.), M.R.C.P. (London), and Ronald V. Christie, M.D. (Edinburgh), M.Sc. (McGill), D.Sc. (London), Sc.D. (Dublin), F.A.C.P., F.R.C.P. (London), F.R.C.P. (C). With the assistance of Margaret R. Becklake, M.D., Richard E. Donevan, M.D., Robert G. Fraser, M.D., J. A. Peter Paré, M.D., and W. M. Thurlbeck, M.B. Price, $15.50. Pp. 566, illustrated. Philadelphia: Saunders, 1964.

The Mask of Sanity, 4th ed. Hervey Cleckley, M.D. Price, $9.75. Pp. 510. St. Louis: Mosby, 1964.

Medical Department, United States Army: Blood Program in World War II. Colonel John Boyd Coates, Jr., M.C., Editor-in-Chief, and Elizabeth M. McFetridge, M. A., Associate Editor. Prepared and published under the direction of Lieutenant General Leonard D. Heaton, The Surgeon General, United States Army. Price, $8.00. Pp. 922, with 195 illustrations, 42 tables, 14 charts and 7 maps. Washington 25, D. C.: Superintendent of Documents, U. S. Government Printing Office, 1964.

Laboratory Methods in Blood Coagulation. James W. Eichelberger, Jr. With a Foreword by William H. Crosby, M.D. Price (paper), $2.95. Pp. 95. New York: Hoeber Med. Div.-Harper & Row, 1965.

Ciba Foundation Symposium Jointly with the Co-ordinating Committee for Symposia on Drug Action: Animal Behaviour and Drug Action. Hannah Steinberg, Ph.D., Editor for the Co-ordinating Committee; A.V.S. de Reuck, M.Sc., D.I.C., and Julie Knight, B.A., Editors for the Ciba Foundation. Price, $13.00. Pp. 491, with 103 illustrations. Boston: Little, 1964.

Polypoid Lesions of the Gastrointestinal Tract, Volume II in the Series, **Major Problems in Clinical Surgery.** Claude E. Welch, M.D., and J. Englebert Dunphy, M.D., Consulting Editor. Price, $7.50. Pp. 148, illustrated. Philadelphia: Saunders, 1964.

Ciba Foundation Symposium: Control of Glycogen Metabolism. W. J. Whelan, Ph.D., D.Sc., F.R.I.C., Consulting Editor, and Margaret P. Cameron, M.A., Editor for The Ciba Foundation. Price, $12.50. Pp. 434, with 72 illustrations. Boston: Little, 1964.

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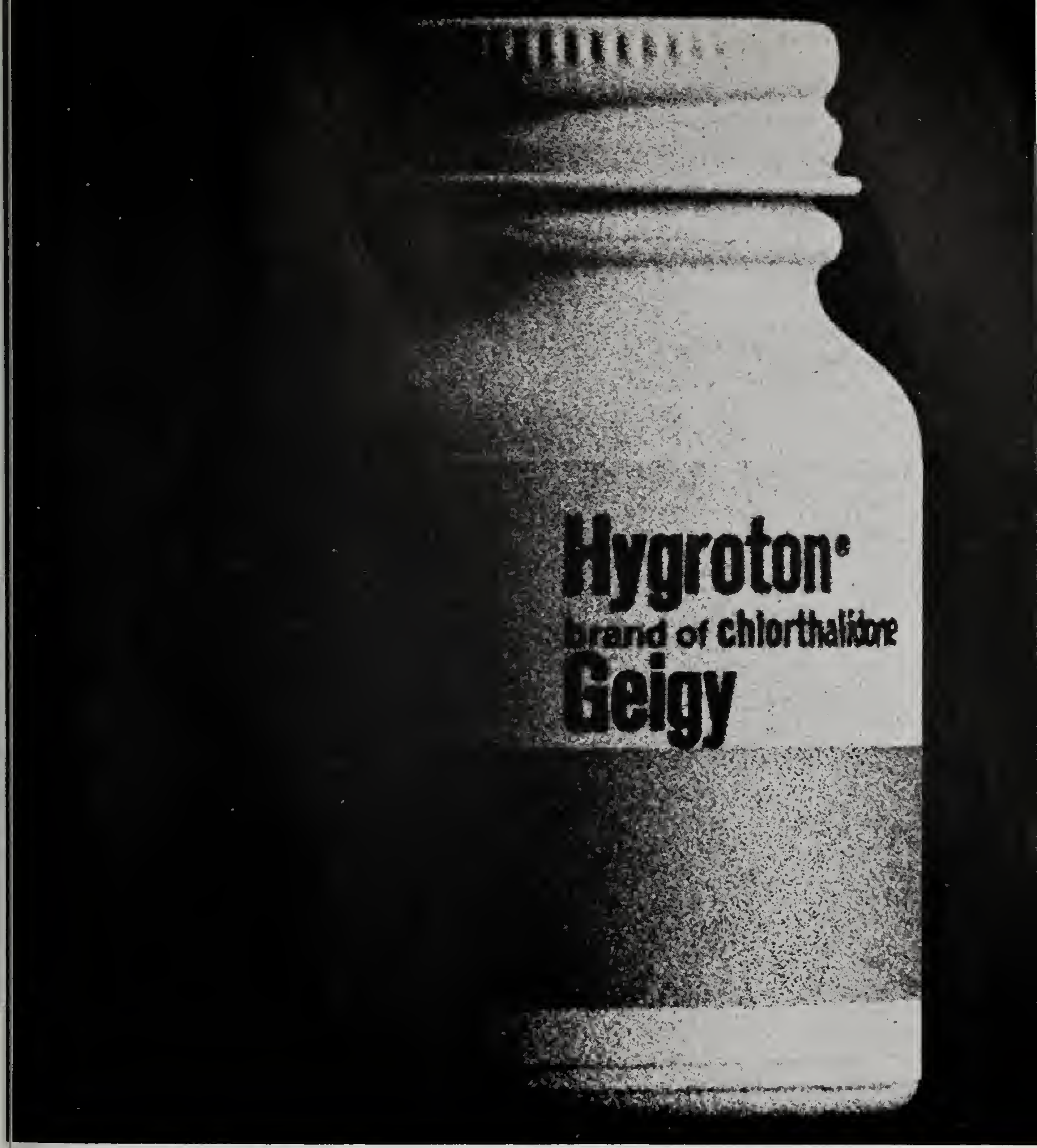

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References: (1) Warres, H. L.: *Missouri Med.* 61:27, Jan., 1964. **(2)** Palmer, K. J.: *Week. Urol. Clin. Letter* vol. 6, no. 36, Dec. 24, 1962. **(3)** Carroll, G.: *J. Urol.* 90:476, Oct., 1963. **(4)** Ward-McQuaid, J. F. N. C.; Jichlinski, D., and Macis, R.: *Brit. M. J.* 2:1311, Nov. 23, 1963.

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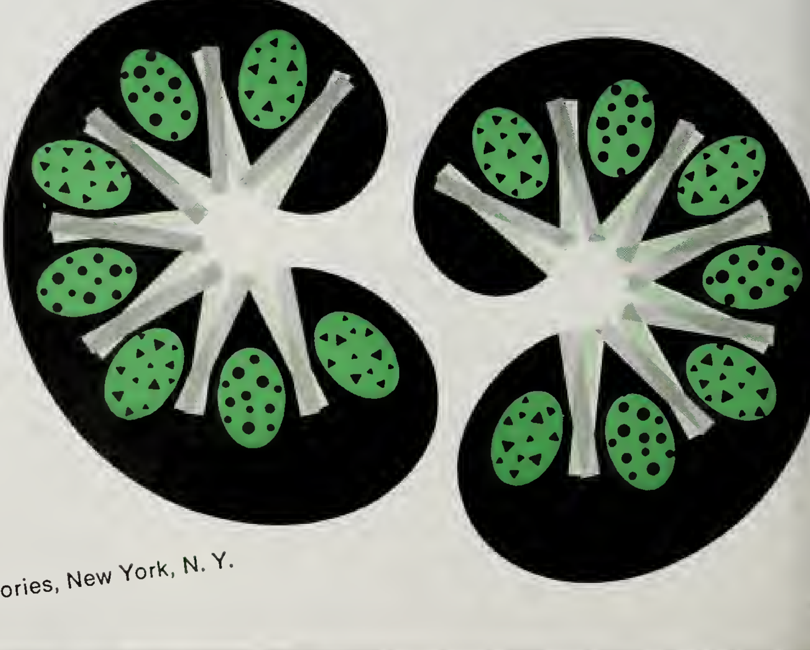

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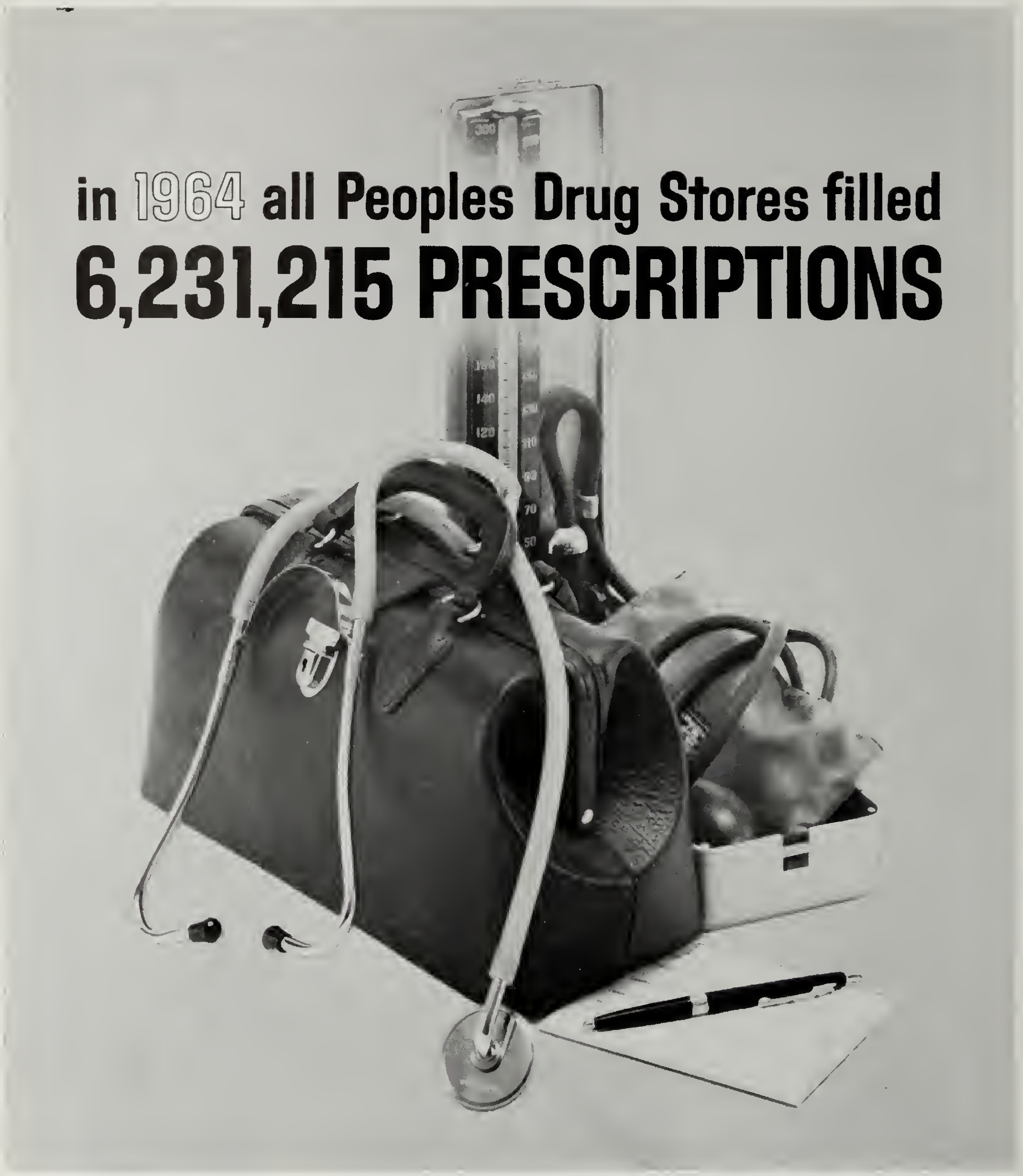
* AMA Council on Foods and Nutrition: The Regulation of Dietary Fat, *JAMA* 181:411-423 (August 4, 1962).
AMA Council on Foods and Nutrition: Composition of Certain Margarines, *JAMA* 179:719 (March 3, 1962).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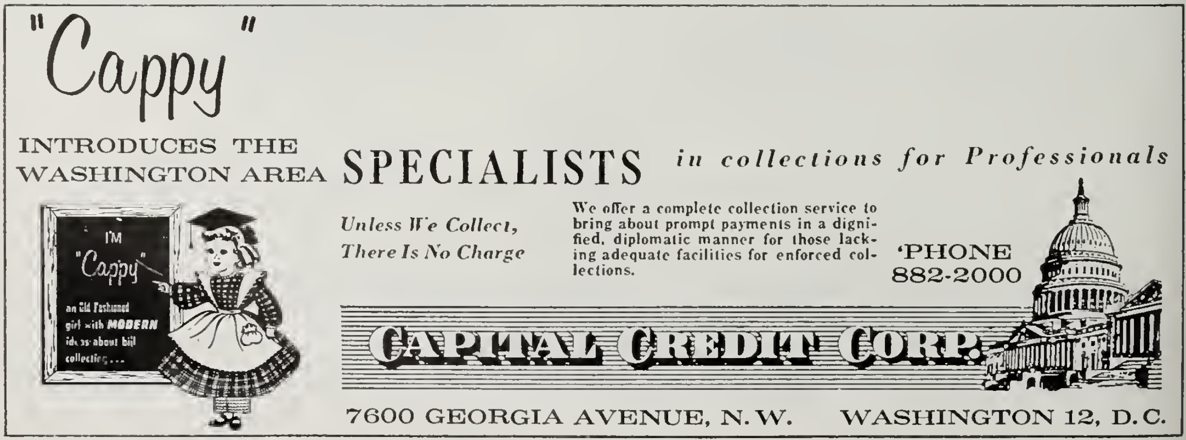
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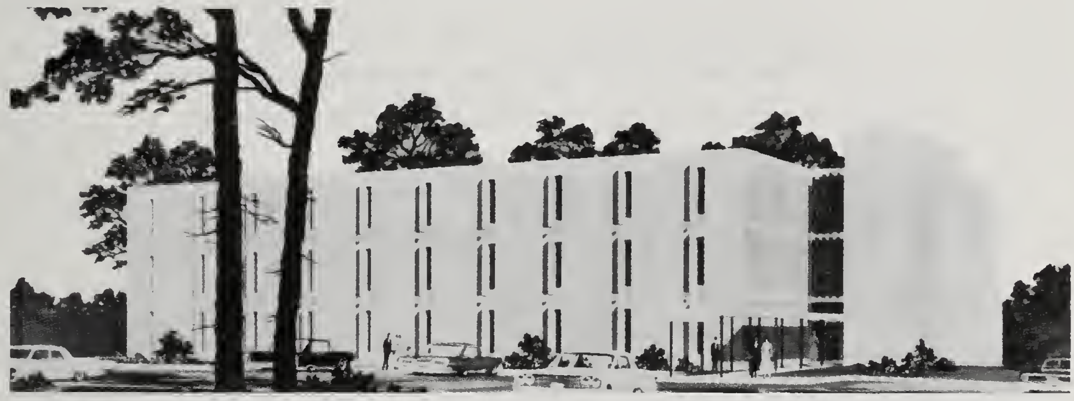

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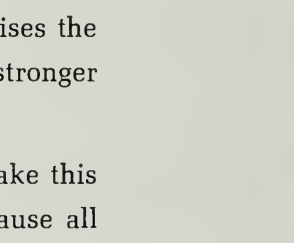

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DOSAGE: One or two tablets four times a day. After remission of symptoms dosage should be reduced to the minimum maintenance level.

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REF: 1. Boreus & Sandberg, ACTA. PHYSIOL. SCAND., 28:266, 1953. 2. Cohen, et al.: J.A.M.A., 165:225, 1957.

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Side Effects: Side effects (usually dose-related) are fatigue, drowsiness and ataxia. Also reported: mild nausea, dizziness, blurred vision, diplopia, headache, incontinence, slurred speech, tremor and skin rash; paradoxical reactions (excitement, depression, stimulation, sleep disturbances and hallucinations) and changes in EEG patterns. Abrupt cessation after prolonged overdosage may produce withdrawal symptoms similar to those seen with barbiturates, meprobamate and chlordiazepoxide HCl.

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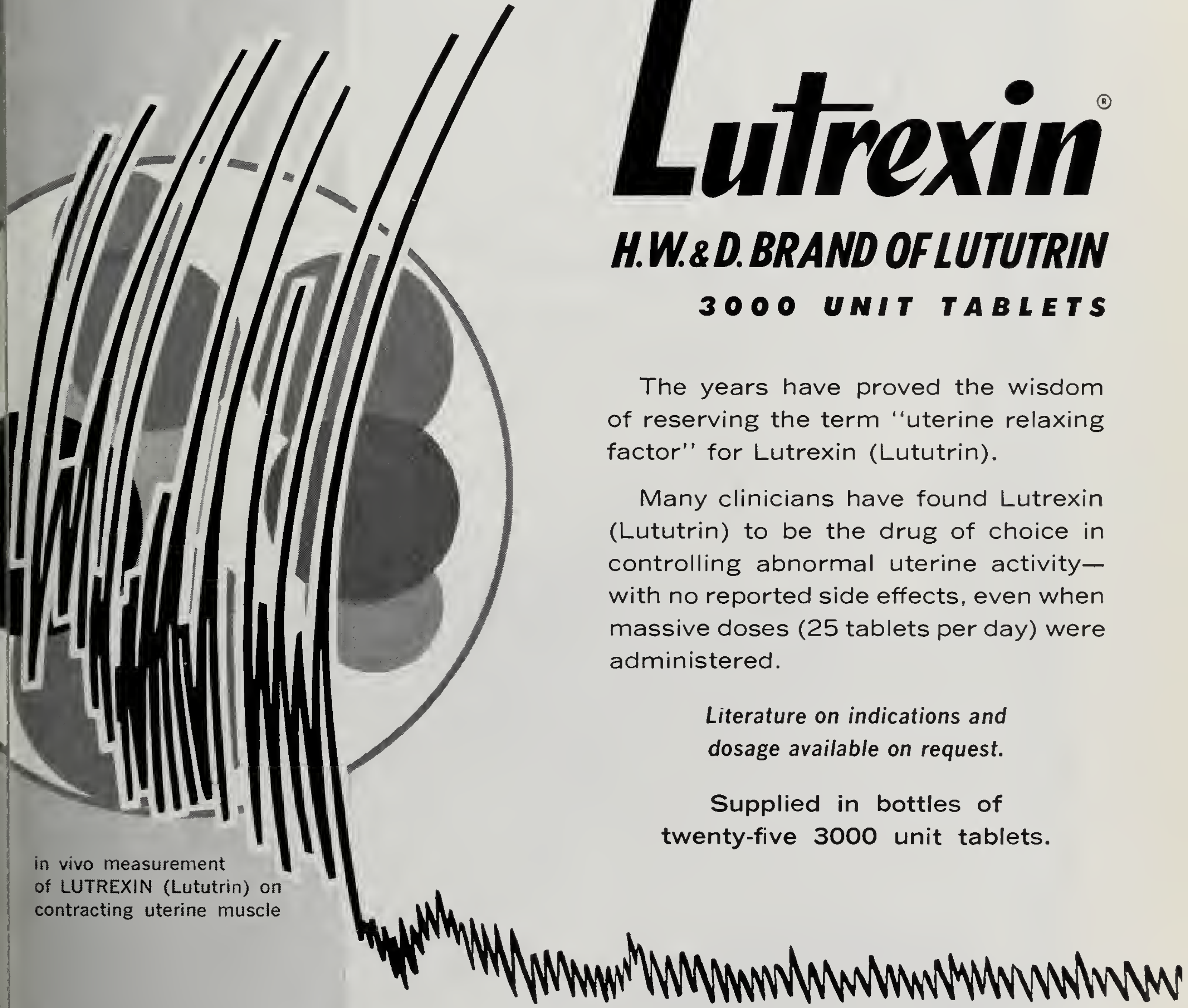

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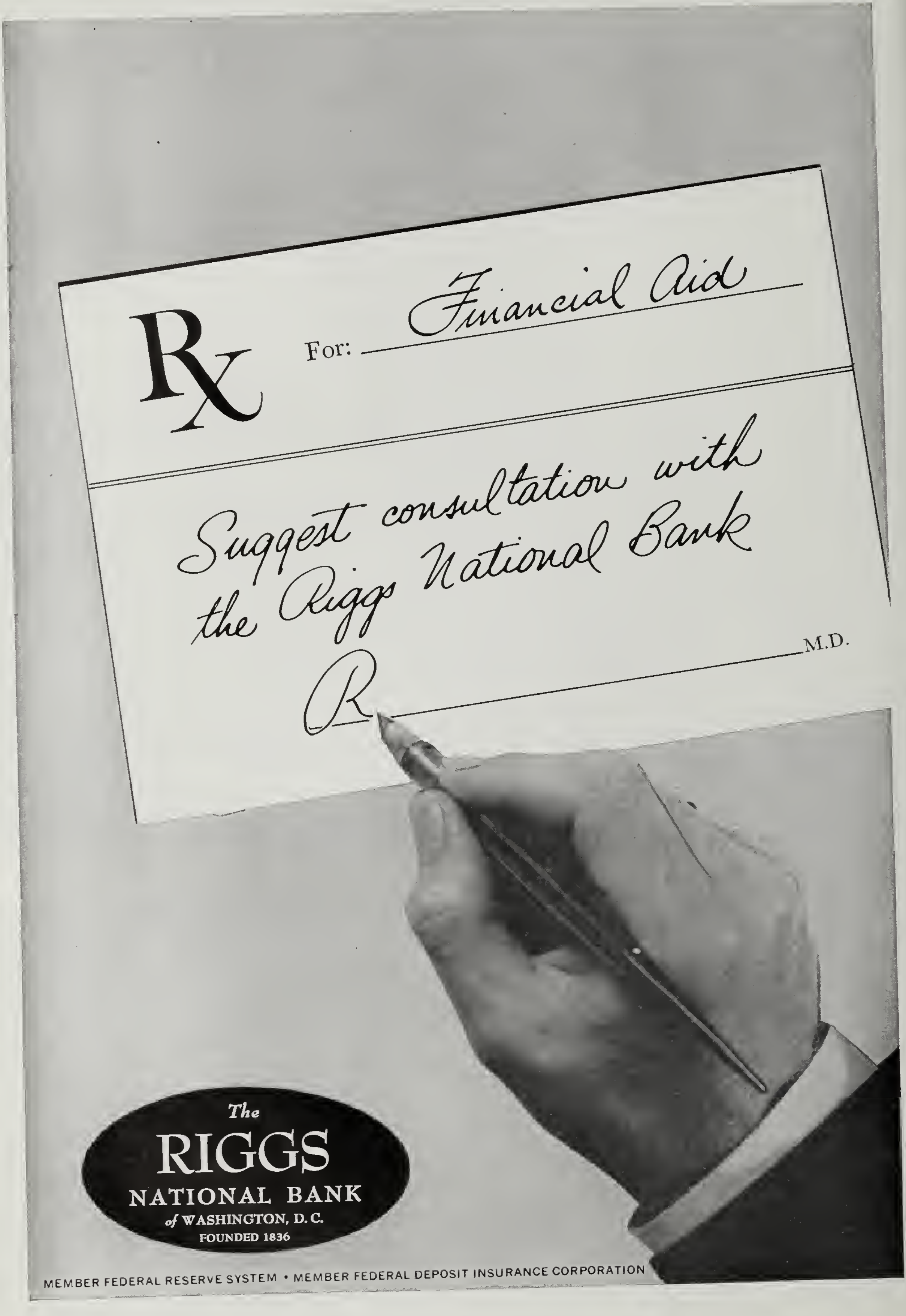

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Yearly Subscription, $4.50
Single Number, 50¢

Second-class postage paid at Baltimore, Md.
Published monthly at
Mount Royal and Guilford Avenues,
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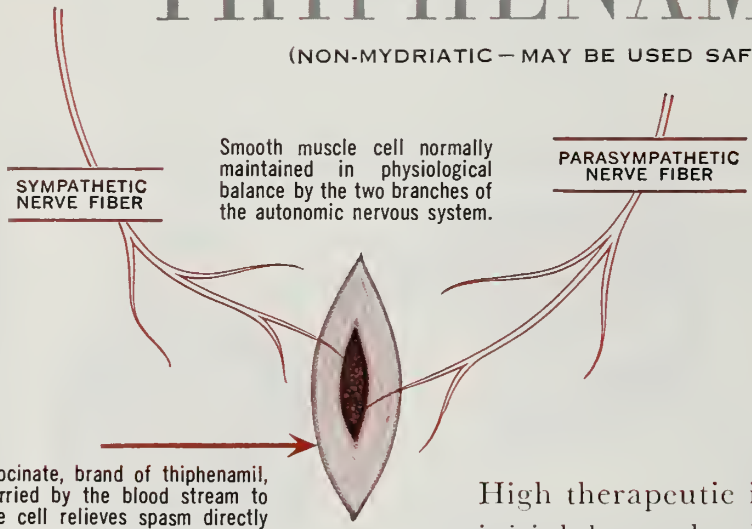
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* AMA Council on Foods and Nutrition: The Regulation of Dietary Fat, *JAMA* 181:411-423 (August 4, 1962).
AMA Council on Foods and Nutrition: Composition of Certain Margarines, *JAMA* 179:719 (March 3, 1962).

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May 30–June 2: American Thoracic Society. Palmer House, Chicago. Address: Mr. Frank W. Webster, *Executive Secretary*, 1790 Broadway, New York 19, N. Y.

June 14–16: American Neurological Association. Claridge Hotel, Atlantic City, N. J. Address: Mr. Melvin D. Yahr, *Executive Secretary*, 710 West 168th Street, New York, N. Y.

June 15–19: American Medical Women's Association. Philadelphia. Address: Mrs. Gertrude F. Conroy, *Executive Secretary*, 1790 Broadway, New York, N. Y. 10019

June 17–18: American Rheumatism Association. Sheraton Hotel, Philadelphia. Address: Mr. Gerard W. Speyer, *Executive Secretary*, 10 Columbus Circle, New York, N. Y.

June 17–20: American Therapeutic Society. Essex House, New York. Address: Dr. Oscar B. Hunter, Jr., *Executive Secretary*, 915 19th Street, N. W., Washington, D. C. 20006

June 17–21: American College of Chest Physicians. Waldorf-Astoria Hotel, New York. Address: Mr. Murray Kornfeld, *Executive Director*, 112 East Chestnut Street, Chicago, Ill. 60611

June 19: American Association for the Study of Headache. New York Hilton Hotel, New York. Address: Dr. Lester S. Blumenthal, *Chairman*, 5315 Connecticut Avenue, N. W., Washington, D. C. 20015

June 19: International Cardiovascular Society (North American Chapter). Commodore Hotel, New York. Address: Dr. Ralph A. Deterling, Jr., *Secretary-General*, 171 Harrison Avenue, Boston, Mass. 02111

June 20–24: American Medical Association. Americana Hotel, New York. Address: Dr. F. J. L. Blasingame, *Executive Vice President*, 535 North Dearborn Street, Chicago, Ill. 60610

June 27–29: International Congress on Smoking and Health. New York. Address: Mr. W. A. Scharffenberg, *Executive Secretary*, 6830 Laurel Street, N.W., Washington, D. C. 20012

June 28–July 1: American Orthopaedic Association. Homestead Hotel, Hot Springs, Va. Address: Dr. Sam W. Banks, *Secretary*, 29 East Madison Street, Chicago, Ill. 60621

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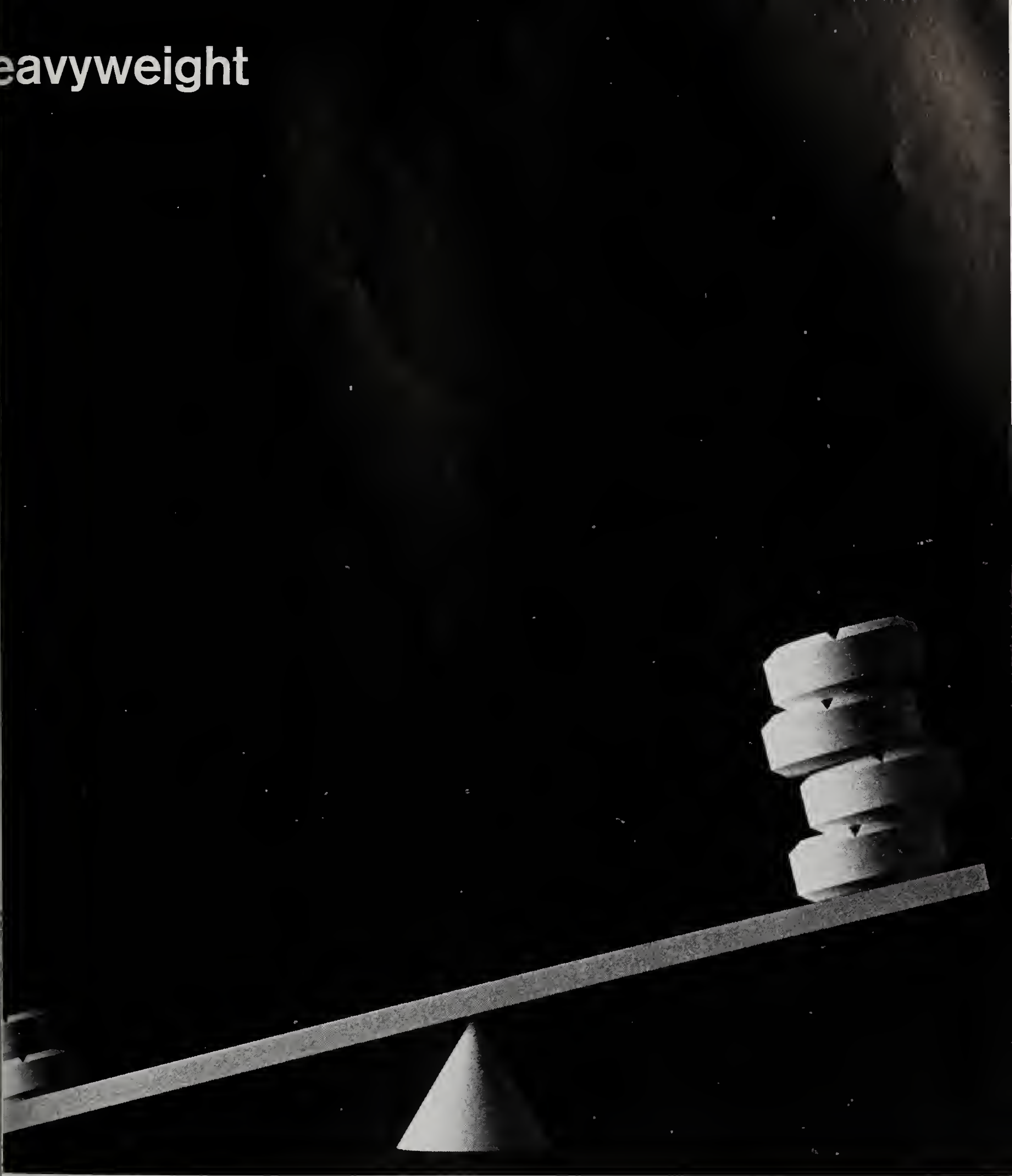

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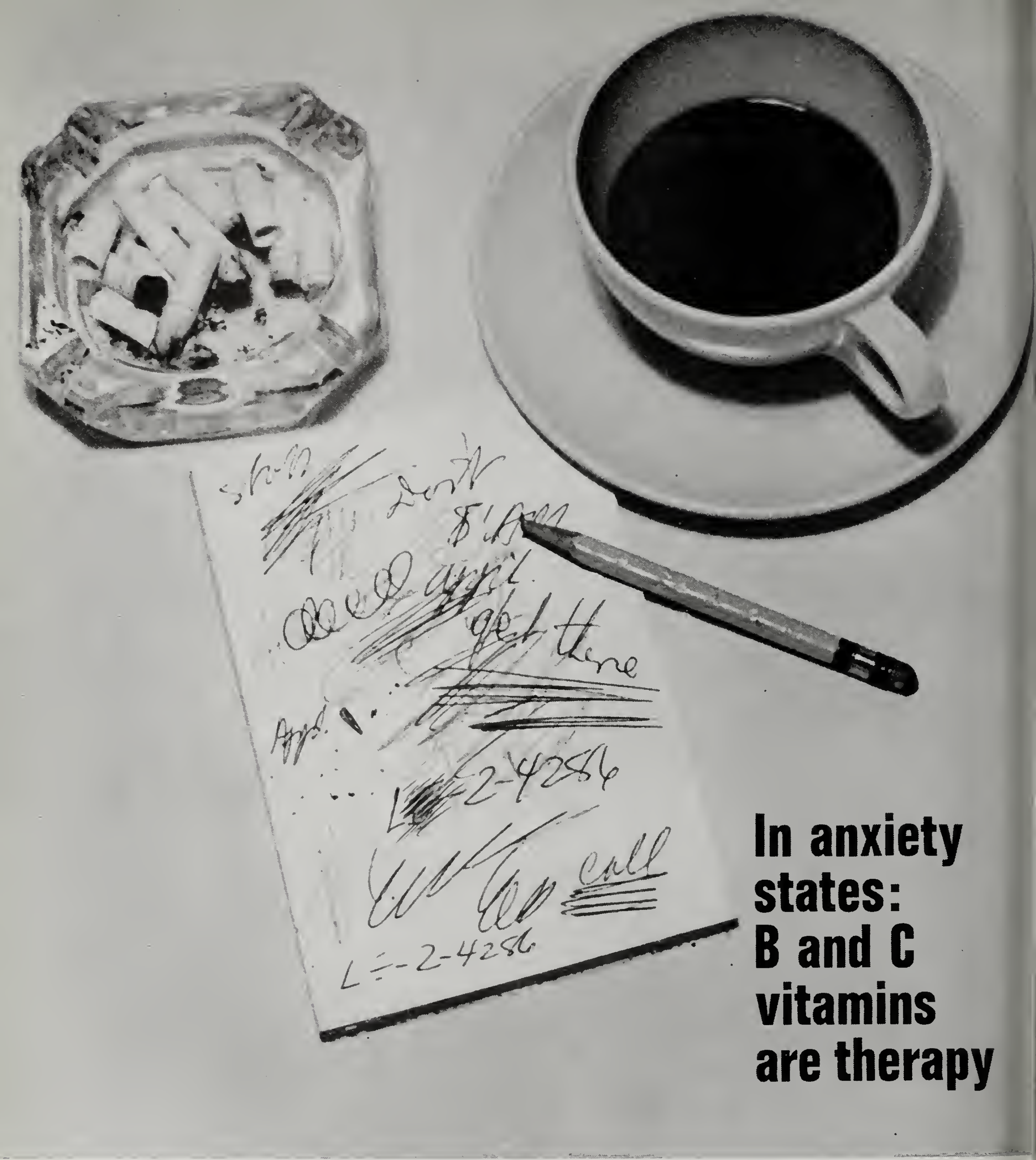

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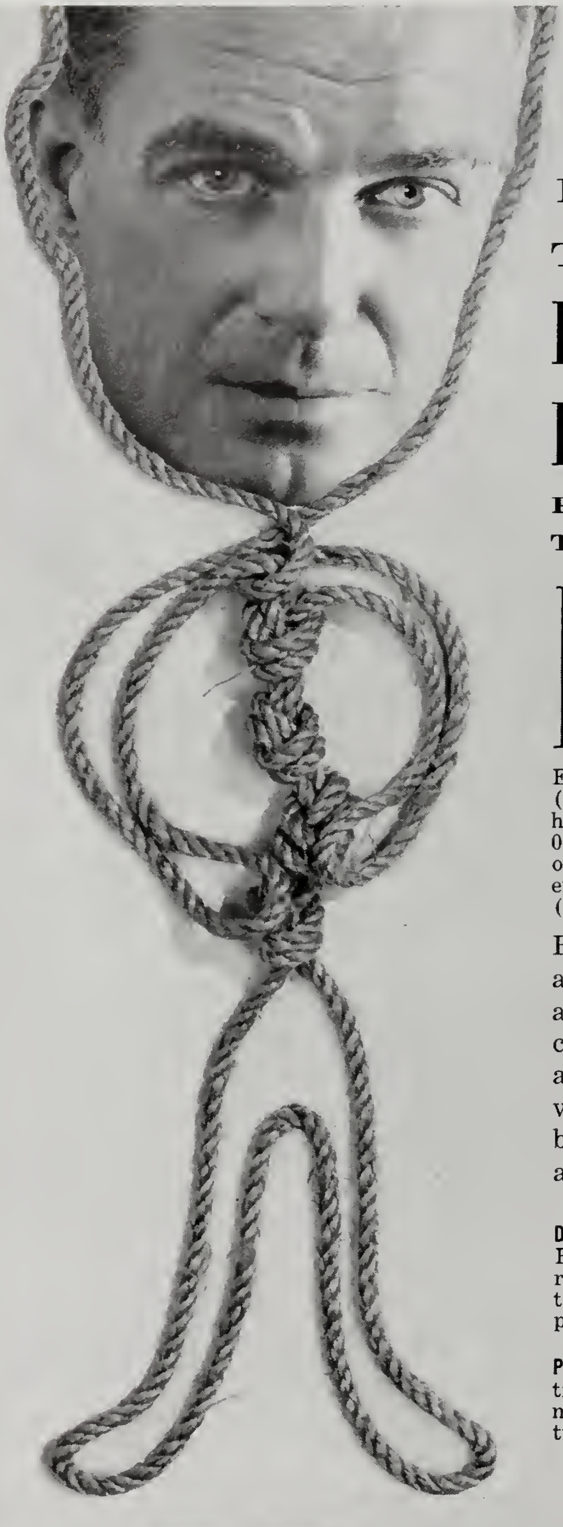

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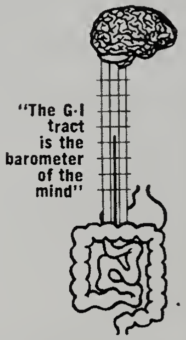
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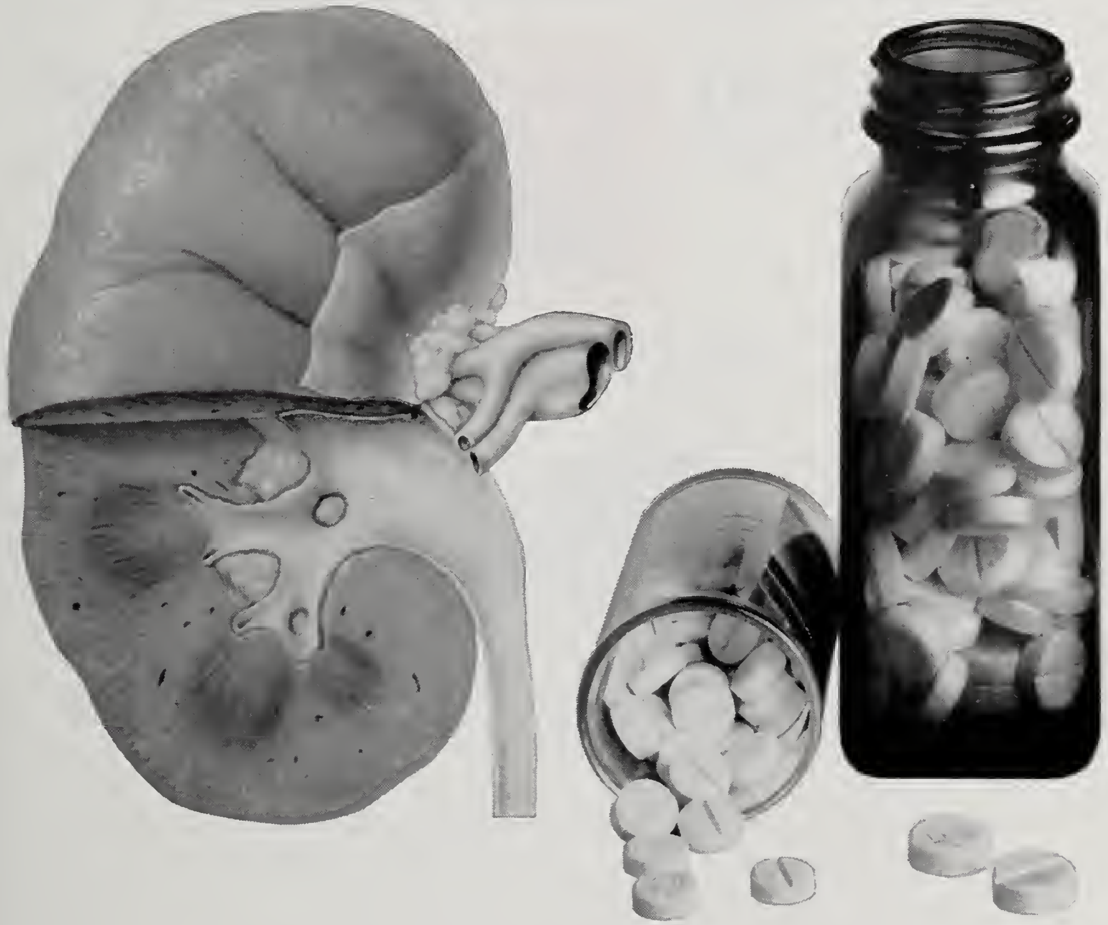

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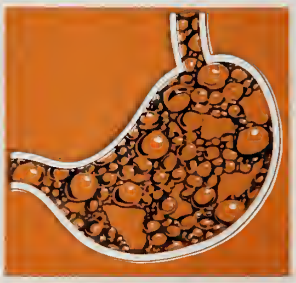

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BOOK REVIEWS

Medical Department, United States Army: Preventive Medicine in World War II. Communicable Diseases: Arthropodborne Diseases Other Than Malaria, Volume II. COLONEL JOHN BOYD COATES, JR., M.C., Editor-in-Chief; EBBE CURTIS HOFF, Ph.D., M.D., Editor for Preventive Medicine, AND PHEBE M. HOFF, M.A., Assistant Editor. Prepared and published under the direction of LIEUTENANT GENERAL LEONARD D. HEATON, The Surgeon General, United States Army. Price, $4.25. Pp. 397, with 65 figures. Washington 25, D. C.: Superintendent of Documents, U. S. Government Printing Office, 1964.

This volume is one of a series which comprise the official history of the Medical Department of The United States Army in World War II. These volumes are divided into 2 series: (1) the administrative or operational series; and (2) the professional or clinical and technical series. This is one of the volumes of the latter series and it deals with arthropodborne diseases other than malaria. The text was prepared by 10 authors, all of whom are recognized authorities in the field. Dr. Stanhope Bayne-Jones acted as chairman of the Editorial Advisory Board and was a contributor to this volume as well.

The text deals in great detail with historical, epidemiologic, clinical and prevention and control considerations of the following arthropodborne diseases: encephalitis, bartonellosis (Oroya fever), dengue, filariasis, leishmaniasis, plague, relapsing fever, sandfly fever, typhus fevers (epidemic and murine), scrub typhus and scrub itch, Rocky Mountain spotted fever, and yellow fever. There are a number of pertinent illustrations, charts and maps which serve to amplify the text. Each chapter is amply footnoted with bibliographic references. The text is very readable and is most interesting from a historic as well as from clinical and medicomilitary points of view. Modern means of communication with increased ease and speed of travel have created an ever shrinking world in which a detailed knowledge of the diseases dealt with in this volume has become of great practical importance. This book documents the experiences with these diseases during World War II and may serve as a valuable reference source in this area of medical knowledge.

SAUL ZUKERMAN, M.D.

Clinical Neurology. FRANK A. ELLIOTT, M.D., F.R.C.P. Price, $12.50. Pp. 688, with 171 illustrations. Philadelphia: Saunders, 1964.

This text is intended for students and residents of neurology. Unlike other monographs in the field, Dr. Elliott has compiled a readable volume of neurologic principles and entities rather than an encyclopedic reference work. The first 8 chapters are concerned with "the diagnostic significance of symptoms and signs as well as the interpretation of various clinical phenomena." These chapters are exceptionally well written and distinguish this text from others in its value for students and residents. The remainder of the book touches on the various pathologic entities encountered in neurologic practice. The amount of space allotted to each entity is reasonable in relation to the frequency of the disorder. Each section is well organized and subdivided into (a) pathology, (b) clinical features, (c) laboratory aids, (d) diagnosis, and (e) treatment. Happily, the author has chosen to state that no treatment for disease is available when such is the case rather than suggest that vitamin B_{12} and other nostrums should be prescribed for lack of more effective therapy.

As in all monographs, the author cannot be equally competent in each of the various subspecialties of neurology. Consequently, some chapters are better than others. The section on congenital and neonatal diseases of the nervous system is poorly organized and will not afford the interested student a system for the study and diagnosis of mental retardation and inborn errors of metabolism.

This text can be thoroughly recommended as a readable and enjoyable summary of clinical neurology for the student and resident. It will not serve as a reference text for the accomplished neurologist.

GERALD M. FENICHEL, M.D.

Emergency Treatment and Management, 3rd ed. THOMAS FLINT, JR., M.D. Price, $8.75. Pp. 686, illustrated. Philadelphia: Saunders, 1964.

The author, in the preface, purports to deal predominantly with the emergency care and management of the acutely ill patient when seen in the home or the emergency room, for surgical, medical, pediatric, orthopedic and obstetrical emergencies, an obviously heroic assignment. Accordingly, it would be expected that the book would be concise, limited in scope to true emergency care of the more common emergencies, and neglectful of extremely rare, unusual, and nonemergency illnesses. However, the author has seen fit to include a half-page discussion as to the abuse of emergency facilities and over 40 pages of administrative, clerical and medicolegal principles and procedures, covering abandonment to malpractice, subpoenas, and testimony in court, possibly a reflection of the California origin of the book. Although basically all-inclusive in regards to subjects covered, the commoner medical emergencies seem to have been given far less attention than some of the rarer and lesser expected events. Almost 6 full pages are devoted to an explanation of types of ionizing radiation, and treatment of radiation and thermal effects of nuclear explosion. Approximately half that space is devoted to the treatment of diabetic coma and insulin coma. Ten pages are devoted to barotrauma and 6 to the section on cardiac emergencies. The section on surgical and emergency procedures describes the technique for peritoneal dialysis but does not describe thoracentesis or lumbar puncture techniques. Llama and camel bite treatment are well described, but in the section on cardiac emergencies neither auricular flutter nor paroxysmal auricu-

(Continued on page 21)

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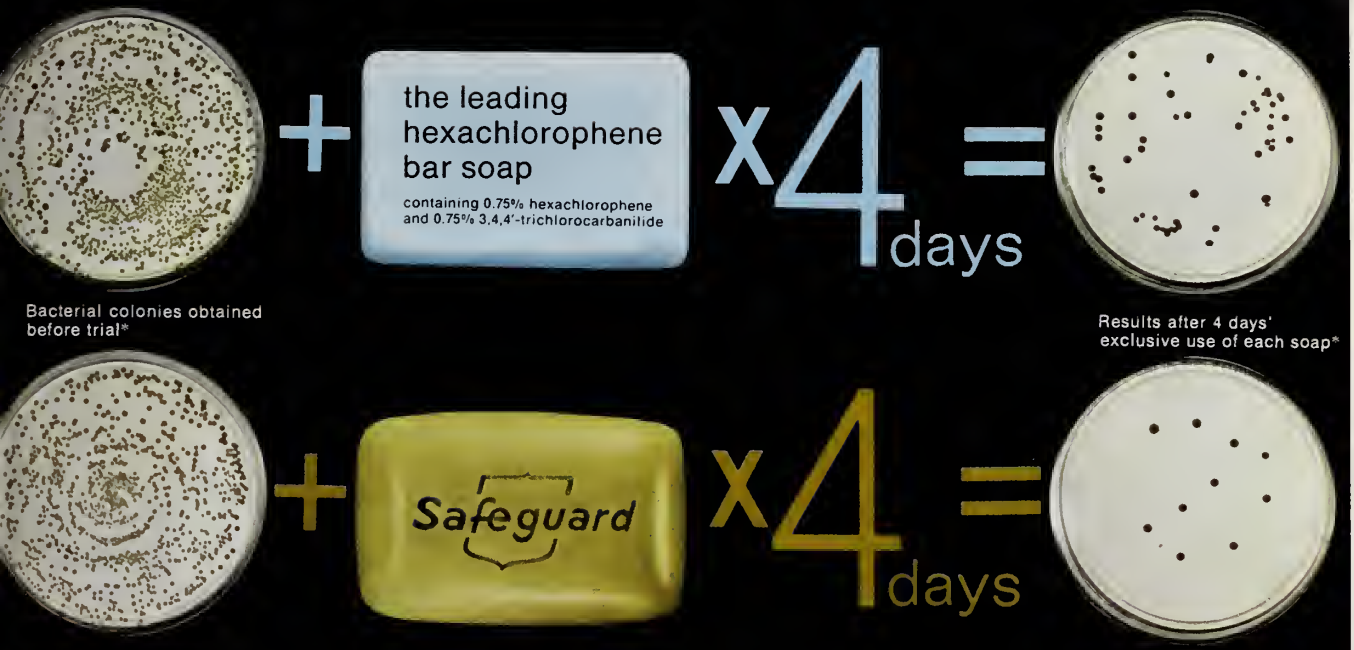
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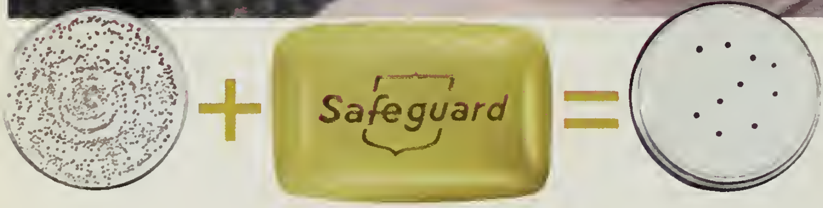

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Book Reviews

(*Continued from page 18*)

lar tachycardia is listed. However, paroxysmal tachycardia is listed under pediatric emergencies, where in treatment no mention is made of Prostigmin®, vasopressors, digitalis, quinidine or cardioversion, but ipecac is recommended if carotid sinus pressure fails. Positive pressure oxygen and morphine are also recommended.

In regard to specific methods of treatment there are many areas that might be open to question. For example, in the section on myocardial infarction with shock, epinephrine and phenylephrine are recommended, but no mention is made of Levophed®, Wyamine®, Aramine® or angiotensin.

In the treatment of insulin coma the response to treatment with glucose is listed as rapid, but "may be delayed in protamine zinc insulin or NPH insulin overdosage."

The book is well cross-referenced and indexed, well printed, and includes an excellent section on poisonings. It misses its mark by its devotion to the legal aspects of medicine, cursory treatment of the common medical emergencies, and in its efforts to be totally comprehensive by including much esoteria. I feel the book is of limited value in this area, although it might be more practical in a more medically remote area.

Lewis H. Biben, M.D.

Infectious Diseases of Children, 3rd ed. Saul Krugman, M.D., and Robert Ward, M.D. Price, $15.75. Pp. 423, with 66 figures and 8 plates in full color, including a gatefold insert. St. Louis: Mosby, 1964.

The problem of infectious diseases will always be with us, even though preventive measures are gradually making tremendous inroads on the number of cases reported yearly. No general practitioner or pediatrician can be without a book of this type if he or she intends to practice good medicine. Drs. Krugman and Ward cover completely the etiology, diagnosis, pathology, preventive measures and treatment of all the common infectious diseases of children.

This book, which is already a modern classic, has been brought up to date in this third edition by its excellent discussion of the new respiratory viruses which are opening up an entirely new field for causes of cold, croup and pneumonitis. The importance of this group of infectious agents is justified by the allotment of 2 full chapters to the subject.

Modern concepts of polio immunizations, Salk and Sabin, are fully discussed. The progress of preventive medicine is evident in the fact that preventive measures now occupy as much space as treatment, which, fortunately, most of us have not used in the past 8 years.

The schematic drawings are excellent. However, the addition of more color plates to this book, particularly of chicken-pox, roseola infantum, measles, purpura of meningococcus septicemia, Rubella (German measles) and Rocky Mountain spotted fever would make future editions more valuable to the student.

Charles A. Millwater, M.D.

Disseminated Intravascular Coagulation. An Intermediary Mechanism of Disease. Donald G. McKay, M.D. Price, $16.00. Pp. 493, with 204 illustrations, 7 in full color. New York: Hoeber Med. Div.-Harper & Row, 1965.

Reading this book brings back memories of Selye's book on stress. While Selye's ideas attributed many disease processes on a set of circumstances which he called the General Adaptation Syndrome, Dr. McKay similarly correlates many sequential tissue events on the basis of intravascular clotting.

The book is well written and easy to read. However, it leads one to believe that undue stress is placed on the factors of the coagulation mechanism. For instance, he makes a point of the "crush syndrome" as being an example of acute renal failure on the basis of thrombi in small renal veins being observed in studies on experimental animals.

However, many facets of blood coagulation are extensively covered. The book is divided into 4 parts: one on general considerations of blood coagulation mechanisms, a second on clinical syndromes in man associated with or caused by intravascular coagulation, a third study on experimental animals, and a fourth on a synthesis of clinical and experimental observations.

I think this book will appeal primarily to pathologists and surgeons.

Vernon E. Martens, M.D.

Rehabilitation Medicine. A Textbook on Physical Medicine and Rehabilitation, 2nd. ed. Howard A. Rusk, M.D., and 36 Collaborators. With the editorial assistance of Eugene J. Taylor, A.M. Price, $15.50. Pp. 668, with 210 figures and 26 charts. St. Louis: Mosby, 1964.

In this second edition of rehabilitation medicine Dr. Rusk has maintained the same format as the first edition but has revised several chapters. This revision has been particularly noticeable in the chapter on cerebral palsy and the chapter on musculoskeletal disorders, particularly the section on muscular dystrophy. As in the first edition the first half of the book is concentrated on principles of physical medicine and rehabilitation techniques. A great amount of time is spent in discussing paramedical problems, such as vocational problems, social problems, etc. The second half of the book deals with various disability states which come under the province of Physical Medicine and Rehabilitation. Because the book encompasses such a wide variety of conditions it frequently fails to discuss many of these problems in any great detail.

Physicians working in the field would benefit from reading the book as a survey of rehabilitation procedures, but the principal benefit would be as a reference volume for those physicians outside the field who have an interest in rehabilitation problems and who need help in evaluating and treating a long range rehabilitation problem.

David A. Zohn, M.D.

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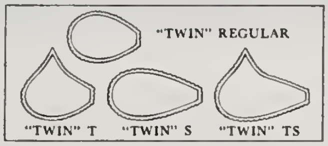

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MEDICAL ANNALS

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May 1965 VOLUME XXXIV • NUMBER 5

The George Washington University Number

THIS IS THE TENTH of a third series of special numbers of the MEDCIAL ANNALS, the scientific material for which is supplied by medical institutions and scientific organizations in the Washington Metropolitan Area. For THE GEORGE WASHINGTON UNIVERSITY NUMBER the Editorial Board is indebted to Dr. Alvin E. Parrish, Consulting Editor of the MEDICAL ANNALS, who secured the papers which appear in this issue.

Auto-immune Phenomenon in Toxemia of Pregnancy*

A Preliminary Study

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THE OCCURRENCE of a circulating antihuman kidney antibody (AHK) in the serum of patients with toxemia of pregnancy has been previously reported by Wagner[1] in 1959 and from the District of Columbia General Hospital by Kramer et al.[2, 3] The immunologic relationships between glomerular basement membrane and placental basement membrane have been studied by Steblay,[4, 5] who demonstrated a degree of crossed reactivity between the 2 tissues by fluorescent antibody techniques. This study was undertaken to elucidate the relationship of the presence of an antibody to the clinical manifestations of the toxemias of pregnancy.

Serum specimens were obtained from 92 patients seen in the prenatal clinics of the District of Columbia General Hospital at the time of their admission to the clinic, and additional specimens were obtained at subsequent clinic visits. Clinical data on the patients included in the study were maintained in the obstetrical division and were not made available for correlation with the immunologic data until the completion of the study. Patients were randomly selected from all primigravida admitted to the prenatal clinic, to which were added all patients seen in the complications clinic for preëclampsia or hypertension, since a higher incidence of toxemic patients could be expected from both groups.

The level of antikidney antibody was determined with polystyrene latex particles coated with a kidney extract for the agglutinating system, as previously reported.[6] The level of antiplacental antibody was determined by modifying this procedure only in the use of a similar extract obtained from fresh normal human placenta obtained at term in place of the infant kidney extract.

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* From the Department of Obstetrics and Gynecology and the Department of Medicine, the George Washington University School of Medicine and the George Washington University Division of the District of Columbia General Hospital.

The clinical data obtained included tabulation of the patients' weight, blood pressure, urinary protein, and degree of edema present with notation of any treatment instituted in addition to the standard data obtained in the prenatal clinic record. The usual clinical criteria of sudden or excessive weight gain, edema, elevation of blood pressure, and proteinuria were used as indications of preëclampsia.

Review of the immunologic data revealed that 34 patients had AHK titers of 1:5 to 1:40 and 58 patients were nonreactive. Table 1 compares the incidence of antikidney and antiplacental reactions. There is no correlation between the presence of an antikidney antibody and an antiplacental antibody in a given patient, although the incidence of positive reactions is about equal. Comparison of individual specimens (table 2) reveals a similar distribution of titers, the number of reactions in the 2 systems being essentially equal but the individuals belonging to different populations. The total columns represent a comparison of the incidence of reactors, while the other columns represent simultaneous determinations on a given specimen.

TABLE 1: Incidence of Antikidney and Antiplacental Reactions

PATIENTS

	AP >1:20	AP <1:20	AP Neg.	Total
AHK >1:20	2	4	7	13
AHK <1:20	5	5	11	21
AHK Neg.	8	16	34	58
TOTAL	15	25	52	92

TABLE 2: Relationship of Antikidney to Antiplacental Reactions

PAIRED SPECIMENS

	AP >1:20	AP <1:20	AP Neg.	Total
AHK >1:20	2	1	14	17
AHK <1:20	2	6	17	25
AHK Neg.	12	29	86	127
TOTAL	16	36	117	169

Of the 92 patients studied, 42 had 1 or more of the signs previously given, i.e., weight gain, edema, hypertension and proteinuria. Thirty-four patients had the signs of preëclampsia and were diagnosed clinically as such. These signs varied from the earliest manifestations of preëclampsia, sudden or excessive weight gain with or without edema followed by elevation of blood pressure, and finally proteinuria as the disease progressively became more severe. Elevation of blood pressure in any patient was considered pathologic if there was a 15 mm. Hg rise in diastolic pressure, taken at the change of the sound, or a 30 mm. Hg rise in systolic pressure accompanied by a rise in diastolic pressure. A blood pressure of 140/90 was considered significant.

All 34 patients had positive AHK titers ranging from 1:5 to 1:40. In the overall study it appears that the lowest titers correspond more closely to the earliest signs of preëclampsia. Generally the higher titers were more often associated with increasing severity of the disease and signs of hypertension and proteinuria.

Eight patients of the 42 who had signs of toxemia of pregnancy had negative titers. These patients did not demonstrate any of the early manifestations of preëclampsia but showed persistent hypertension or proteinuria. These patients had preëxisting hypertension, some with a strong family history, and some had preëxisting chronic renal disease.

Discussion

From the data of this initial study we can see a correlation between clinical preëclampsia and elevated AHK titers, and although 8 patients are too small a group on which to base any conclusions it may be suggested that those with renal disease and/or essential hypertension without superimposed preëclampsia have negative AHK titers. There also seems to be a crude relationship between the height of the titer and the severity of the symptoms of preëclampsia. That is, those patients with the earliest signs of preëclampsia may have started off with a titer of only 1:5 while patients with more significant signs than weight gain alone had higher titers ranging up to 1:40. With this observation it may be suggested that the lowest titers are indeed one of the earliest signs of preëclampsia and one which can be reversed if therapy is instituted promptly. In most of the patients therapy for preëclampsia either on an outpatient or inpatient basis reversed the titers causing them to fall and return to negative levels. Therapy consisted of dietary restriction of salt, bed rest, and the use of diuretics.

(*Continued on page 208*)

Percutaneous Needle Biopsy of the Liver

Review of Experiences at a General Hospital

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NEEDLE BIOPSY OF THE LIVER has become a useful and increasingly employed diagnostic tool. The method was originally described by Ehrlich[1] in 1883, but not until Iversen and Roholm[2] in 1939 published their experiences on the diagnostic significance of liver biopsy did this procedure gain clinical acceptance. Since then innumerable reports on the clinical and investigational applications of this technique have appeared.[3, 4, 5]

It is our purpose to relate the diagnostic experiences at a general hospital of percutaneous needle biopsy of the liver.

Materials and Methods

The charts of all patients who have undergone needle biopsy of the liver in a 1-year period from January 1, 1963 to December 31, 1963 at the District of Columbia General Hospital have been reviewed. One hundred and forty-seven needle biopsies on 145 patients were performed. There were 79 males and 66 females. Either the Vim-Silverman[6] or the Menghini[7] biopsy needles were employed. Those performing the biopsies included interns under close supervision, residents, and attending physicians. In 13 instances insufficient tissue for histologic diagnosis was obtained.

Results

Of the 134 biopsies, 89 were performed primarily to obtain a histopathologic diagnosis in patients with known or suspected primary hepatic disease. In the remainder, evidence of hepatic involvement secondary to a systemic disease was sought.

In patients with primary liver disease the clinical impression arrived at after history and physical examination as well as the performance of tests of "liver function" were as follows: cirrhosis in 63, viral hepatitis in 15, fatty metamorphosis in 6, toxic hepatitis in 3, hepatomegaly in 1, and hepatoma in another. In 62.9 per cent of these cases (56 biopsies) the clinical impression was confirmed by the histopathologic characteristics. In 37.1 per cent (33 biopsies) the histologic diagnosis altered the clinical impression (table 1).

TABLE 1: Clinical Impressions Altered by Liver Biopsy

No. Cases	Clinical Impression	Histologic Diagnosis
17	Cirrhosis	Fatty metamorphosis
6	Cirrhosis	Portal fibrosis
4	Cirrhosis	Focal hepatic necrosis
2	Cirrhosis	Hepatitis
1	Hepatitis	Florid cirrhosis
1	Fatty metamorphosis	Portal cirrhosis
1	Hepatoma	Portal cirrhosis
1	Hepatomegaly	Portal cirrhosis

In the remaining 45 cases biopsy was performed primarily to detect alterations in liver structure due to a suspected systemic disease (table 2). In 26 of these cases (57.7 per cent) liver biopsy made a significant contribution in establishing definitive diagnosis. In the remaining 19 cases the histologic examination disclosed a normal liver parenchyma; in 2 of these cases in which metastatic malignant lesions were suspected subsequent laparotomy proved its presence.

In 2 patients a transient drop in blood pressure occurred following biopsy; replacement of 500 ml. of blood was necessary in 1.

TABLE 2: Correlation of Clinical and Histologic Diagnosis in 45 Patients with Suspected Systemic Disease

No. Cases	Clinical Impression	Result of Liver Biopsy
16	Metastatic malignancy	2 Positive for malignancy 3 Portal cirrhosis 1 Biliary cirrhosis 1 Noncaseating granuloma 1 Chronic passive congestion of liver 8 Normal liver
12	Sarcoidosis	3 Noncaseating granuloma 1 Fatty metamorphosis 1 Chronic passive congestion 7 Normal liver
7	Tuberculosis	3 Caseating granuloma 2 Granuloma 2 Normal liver
4	Fever of unknown origin	1 Granuloma w/*Histoplasma capsulatum* 1 Noncaseating granuloma 1 Microabscesses of liver 1 Cholangitis
3	Space-occupying lesion	1 Granuloma 2 Normal liver
1	Leukemia w/hepatomegaly	1 Leukemic infiltrate of liver
1	Lymphoma	1 Hodgkin's disease
1	Toxic inhalation	1 Normal liver

Discussion

Needle biopsy of the liver is a valuable adjunct in the diagnosis of hepatic disease. While most pathologic conditions which produce enlargement of the liver are associated with derangement of hepatic function tests,[8] frequently there is a lack of correlation between hepatic function and liver structure as seen on biopsy.[9, 10] Furthermore, the presence of normal liver function tests does not preclude the presence of a diseased liver.[10, 11, 12]

Histopathologic study of the liver is valuable in patients in whom a primary hepatic disorder is clinically evident, since it not only allows a tissue diagnosis but also establishes a baseline in order that the course of the disease may be accurately assessed. In our series of patients with primary hepatic disease liver biopsy has altered the clinical impression in 33.3 per cent of the cases. This figure compares favorably with previous studies.[10, 13, 14] Although the diagnosis of fatty metamorphosis rather than cirrhosis cannot be considered a gross error, the potential reversibility of hepatic steatosis under appropriate therapy coupled with its favorable prognostic significance probably justifies the need for an accurate histologic diagnosis.[14, 15]

The sampling error of liver biopsy has often been overemphasized.[5] Needle biopsy appears to be representative in the diffuse lesions of cirrhosis, cholestasis, steatosis, hepatitis and passive congestion.[3, 5] A normal hepatic parenchyma on needle biopsy, however, does not preclude the presence of focal lesions in the liver.[16]

In large series, liver biopsy has allowed detection of about 70 per cent of hepatic metastasis.[14, 17, 18, 19] Recently in a random sample of patients with metastatic carcinoma the diagnostic yield of this procedure in detecting liver involvement has been in the range of 50 per cent.[19] In the absence of hepatomegaly or abnormal tests needle biopsy has shown hepatic metastasis in more than 25 per cent of patients with proven metastatic involvement of the liver.[16]

Granulomas of the liver may be caused by a variety of disorders. In cases in which extrapulmonary tuberculosis,[20] sarcoid,[21] or disseminated fungal[22] involvement is suspected the presence of hepatic granulomas may be of diagnostic significance. Furthermore, special staining techniques as well as culture of the tissue may aid in determining an etiologic agent.

In the present study liver biopsy has disclosed an etiology for hepatomegaly and/or abnormal liver functions in 8 out of 16 patients suspected of harboring metastatic carcinoma of the liver, in 5 out of 12 patients with possible sarcoidosis, and in 5 out of 7 patients with tuberculosis.

In cases of pyrexias of unknown etiology liver biopsy has been helpful in establishing a diagnosis.[23, 24] Histologic evaluation of the liver was of significance in arriving at a definitive diagnosis in all of our patients with fever of unknown origin.

Although not a primary diagnostic tool in hematologic disorders, liver biopsy may provide invaluable information in some instances.[3, 25] In our experience it has allowed the diagnosis of lymphoma, and it has clarified the presence of hepatomegaly in a patient with leukemia.

The obtaining of a satisfactory specimen on needle biopsy of the liver depends on many factors, including the experience and skill of the operator, the size, position and consistency of the liver, the coöperation of the patient, and the type of needle employed.[5]

The failure to obtain tissue sufficient to allow histologic diagnosis in the present series appears rather high (8.9 per cent). This can at least be partly explained by the relative inexperience of some of the physicians in the performance of this procedure.

In over 1,000 biopsies performed with the Menghini needle,[26] failure to obtain tissue has occurred in less than 10 occasions.

Liver biopsy is a relatively safe procedure. In large series the mortality and morbidity of the procedure have been reported as 0.17 and 0.32 per cent respectively.[27, 28] In our experience[26] no fatalities have occurred, and in only 3 cases have significant complications (hemorrhage requiring blood replacement in 3 patients with metastatic involvement of the liver) been observed.

The contraindications for the performance of this procedure are listed in table 3. We think that neither ascites nor hyperbilirubinemia represent a contraindication to percutaneous needle biopsy of the liver. In cases of persistent complete obstruction of the common duct in which clay-colored stools and dark urine are prominent exploratory laparotomy rather than closed biopsy is usually indicated.

Percutaneous needle biopsy of the liver is a relatively innocuous procedure which offers important contributions to diagnosis and management of patients with hepatic disorders.

Summary

Diagnostic experience with percutaneous needle biopsy of the liver in a general hospital has been presented.

In 89 cases of primary hepatic disease, the clinical impression after complete evaluation of the patient has been altered in 33 (37.1 per cent) following liver biopsy.

In 45 cases in which involvement of the liver secondary to a suspected systemic disease was sought liver biopsy has made important contributions to diagnosis in 26 (57.7 per cent).

Significant complications subsequent to liver biopsy occurred in 2 patients. No mortality accompanied the procedure.

TABLE 3: Contraindications to Liver Biopsy

1. Bleeding diathesis
   a. Abnormal bleeding and/or clotting time
   b. Prolonged prothrombin time (greater than 3 seconds of control value)
   c. Thrombocytopenia (less than 75,000/mm.^{3})
2. Infectious process in right lower hemithorax
3. Right subdiaphragmatic abscess or peritonitis
4. Complete obstruction of common duct
5. Lack of coöperation and general debility
6. Severe anemia

Percutaneous needle biopsy of the liver is a valuable adjunct in the evaluation of patients with hepatic disorders.

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Dr. Brem's Statement on Closing VA Hospitals*

Speaking on behalf of the special Medical Advisory Group to the Veterans Administration, I would like to make the following observations relative to the proposed closure of several Veterans Administration Hospitals and Domiciliaries.

Our sole interest in this is the provision of modern medical care of high quality to our eligible veterans. To this end the problems of operating certain hospitals within the VA system have been discussed with us on various occasions.

The great advances in medical knowledge and medical practice over the years have dictated significant changes in the provision of medical care. Medical care—diagnosis and treatment—is now far more effective than even 10 years ago provided the newer knowledge and methods can be made available to patients. This, in turn, requires the application of teams of physicians, nurses, and technicians, and other professional personnel skilled in modern methods, and the presence of facilities and equipment to implement their skills. All of these are expensive and relatively scarce despite their effectiveness. It is quite apparent that they can not be made available to all areas of the country, but rather must be provided in complete centers. The maintenance of small hospitals in remote regions makes it difficult to provide the type of comprehensive medical care to which our veterans are entitled. Sufficient highly trained and skilled professional personnel cannot be persuaded to accept positions in these areas, nor is the provision of expensive facilities and equipment feasible.

No longer is it desirable that medical care be segregated into single diseases or categories. The day of the large tuberculosis hospital, the psychiatric hospital and domiciliary is past. Experience has shown that far better and more effective care and restoration are accomplished in a complete general hospital setting where the experts in the various fields can communicate and consult with one another—where modern modalities and facilities for treatment are available.

Knowing the nature of the hospitals proposed for closure, we must conclude that they cannot provide the full range of comprehensive modern medical care. Many of them have professional personnel vacancies in essential areas. Others have seriously outmoded plants. Still others have the undesirable segregation of domiciliary and tuberculosis patients from the rest of medicine.

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* This is a portion of the statement made to members of Congress, February 8, 1965 by Dr. Thomas H. Brem, Chairman of the Special Medical Advisory Group to the Veterans Administration, regarding plans to close some of the VA hospitals. Dr. Brem is Professor of Medicine at the University of Southern California School of Medicine.

Auto-immune Phenomenon in Pregnancy—Waxman and Kramer

(Continued from page 204)

Our data are in agreement with those reported by Wagner et al.[1] These authors investigated the presence of antibody to placenta, kidney, liver and myocardium and found an increased incidence of demonstrable antibody to tissue antigens in patients with preëclampsia as compared to a nontoxemic group.

Summary

Ninety-two pregnant women were studied for the occurrence of antiplacental and antikidney antibodies. Forty-two had clinical signs of toxemia of pregnancy and, of these, 34 demonstrated the presence of an antikidney antibody.

The presence of antikidney antibody correlated with the earliest signs of preëclampsia. There appears to be a possibility that the earliest rise in titer may be coincident with or even precede the earliest signs of preëclampsia.

No relationship could be established between the appearance of an antiplacental antibody and the development of signs of toxemia.

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Pulmonary Alveolar Proteinosis and Chronic Lymphatic Leukemia

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PULMONARY ALVEOLAR PROTEINOSIS is a disease of unknown etiology, first described by Rosen et al[1] in 1958. Frequently observed clinical features include recurrent febrile episodes of "pneumonia," paucity of physical signs on auscultation and percussion, and a disparity between the dramatic radiographic findings and the relative absence of pulmonary insufficiency. Histologic examination of the lung reveals alveolar spaces filled with eosinophilic granular material and a striking absence of inflammation. Histochemical studies reveal the granular material to be rich in carbohydrate and lipid and to contain some protein. All stains for infectious agents have been negative, and no etiologic agent has yet been identified.

This report deals with a patient who developed evidence of alveolar proteinosis 3 months after he was discovered to have acute lymphocytic leukemia. In addition, mural and venous thrombi were found which contained peculiar cystic bodies not previously described.

Report of Case

A 42-year-old white male baker was first seen by Dr. Rosenberg on August 22, 1963 with chief complaints of weight loss and fatigue of 2 months' duration. He had lost 17 pounds during this period and was progressively becoming more fatigued but had continued to work. He denied chest pain, dyspnea, and cough but experienced mild epistaxis on attempting to clean his nasal passages.

The past history was noncontributory. The patient had been hospitalized for 6 months in 1927 because of acute appendicitis with perforation. His only medication consisted of vitamins. He was known to be allergic to sulfonamides. The family history was noncontributory. The patient had been born in the District of Columbia and had not traveled recently.

He was a well developed and well nourished white male whose skin was smooth and very pale. The temperature was 99°F, the heart rate 80, the respiratory rate 16, and the blood pressure 120/80. There was a bruise on the left inner thigh measuring approximately 3 cm. in diameter, and a well healed right lower quadrant scar was present. The spleen was palpable, firm and nontender, extending 6 cm. below the costal margin on deep inspiration. Otherwise the examination was normal.

The patient was hospitalized at the George Washington University Hospital. The physical findings were the same as those observed in the office. The following laboratory studies were abnormal: The hemoglobin was 9.7 Gm., the hematocrit 29, the white blood cells 18,440, the red blood cells, 3,260,000, MCV 89, and MCHC 33.5. Platelets were 30,000, white blood cell count was 71 per cent lymphocytes, with some lymphocytes appearing abnormal, 6 per cent neutrophils and 5 per cent band forms.

Blood uric acid was 4.7 mg.; alkaline phosphatase 1.6 units, and SGPT 13 u./ml. Cephalin flocculation was 2 plus in 48 hours. Prothrombin activity was 100 per cent. A chest X-ray film revealed the lungs to be slightly emphysematous. The cardiac silhouette was normal.

The bone marrow revealed many lymphocytes and was thought to represent either lymphosarcoma with bone marrow involvement or chronic lymphatic leukemia.

The patient was treated with Leukeran® 2 mg., t.i.d. and prednisolone 5 mg. q.i.d. He was discharged from the hospital on August 29 and was seen first at weekly and later at biweekly intervals until December, 1963. During this time his therapy was maintained. He continued to feel fatigued but was able to continue working. His blood count and other blood tests all remained essentially unchanged. In

December he started to complain of some dyspnea on exertion for which no new cause was found. He remained afebrile during this period.

On December 20 he returned to the office because of weakness and dyspnea. His heart rate was 130 and the temperature 103°F. An X-ray film of the chest now revealed a diffuse infiltrative lesion throughout both lung fields. He was started on Tetrex,® 500 mg. q.i.d., but because he did not improve he was admitted to G.W.U. Hospital on December 21. He appeared acutely ill, pale, tachypneic, and sweating profusely with a blood pressure of 110/80. Pulse was 110 and the rhythm regular; the temperature was 39°C, and the respiratory rate 29.

The urine was normal. The hemoglobin was 8.6 Gm., the hematocrit 26 per cent and the white blood cells 3,200, with 12 per cent neutrophils, 3 per cent band forms, and 85 per cent mature lymphocytes. The platelets numbered 32,000. The bone marrow revealed a few megakaryocytes, normoblasts, and many lymphocytes. It was essentially similar to that seen during the first hospital admission. Lymph nodes were not palpable. There were rhonchi throughout both lung fields. The heart sounds were difficult to hear because of the rhonchi, but there were no murmurs. The spleen was palpable 4 cm. below the costal margin. The liver was palpable at the right costal margin. There were a number of superficial skin bruises. Immediately after admission the blood pressure dropped to 90/60. The patient was given Solu-Cortef® 100 mg. I.V. and Aramine® 10 mg./150 c.c. D/W, and then experienced a hypertensive episode. The blood pressure returned to normal after the Aramine was discontinued. The patient was started on INH® 150 mg. b.i.d., Chloromycetin® 1 Gm. q. 4 hr., and streptomycin 500 mg. q. 6 hr. Mycostatin® and 20 c.c. of gamma globulin were given daily.

A chest X-ray film revealed a nodular density in the left upper lobe, dense infiltration with some consolidation in the left lower lobe, and a finer infiltrate in the entire right lung field. The mediastinum was slightly widened. Despite the antibiotics the patient continued to be febrile, the temperature ranging from 38 to 40°C, and he became progressively more anoxic. Blood cultures were negative. Several hard plaques were discovered on his soft palate and tonsillar fossae. The sputum revealed *Candida albicans* and scanty Herellea in addition to a normal flora. No acid-fast bacilli were seen. On December 23 an electrocardiogram revealed atrial fibrillation with a ventricular rate of 120–130. There were nonspecific ST-T changes believed to be secondary to the rapid rate.

On December 24 the patient received 1 unit of packed red blood cells which did not alter the hematocrit. A portable chest X-ray film revealed an increase in the left midlung field infiltrate. The next day an X-ray film revealed further increase in the areas of pulmonary consolidation. A tracheostomy was performed under local anesthesia. The blood pressure fell to 90/60. Respirations became gasping at 20–24/minute. The patient was placed on the Bennett respirator but expired shortly after.

Autopsy showed that the right lung weighed 1,000 Gm. and the left 1,140 Gm. They were both firm and distended, filling most of the thoracic space. The pleural spaces were free of fluid, but there were a few fibrinous adhesions. The cut lung retained its shape. The cut surfaces were dry and varied from light red to dark red. There were no areas of granularity, and no pus was seen. Numerous emboli were found in the small branches of the pulmonary arteries. The heart weighed 440 Gm. The walls of both ventricles were thickened, the right measuring 7 mm. and the left 18 mm. in thickness. The myocardium appeared normal. There were loosely adherent, firm, rough-surfaced mural thrombi in the right atrial appendage and on the basilar half of the right side of the intraventricular septum. The underlying endocardium appeared normal as did the valves and the coronary arteries. The liver was reddish brown and firm and weighed 3,020 Gm. In the extrahepatic portion of the portal vein was a loosely adherent, rough, reddish gray, firm mural thrombus, 3 cm. long, which only slightly narrowed the lumen of the vein. The spleen was firm, dark red, and weighed 560 Gm. Malpighian corpuscles could not be identified on the cut surface. All lymph nodes were slightly enlarged, pale white, and firm. The rest of the organs, including the brain, were grossly normal.

Microscopic examination revealed small lymphocytes and lymphoblasts in the liver sinusoids, in the red pulp of the spleen, and in the vertebral bone marrow. The normal marrow components were strikingly reduced. Sections of lymph nodes revealed loss of follicles and obliteration of sinusoids with many immature lymphocytes, some of which had infiltrated through the capsule into the perinodal fat. Similar infiltrates were seen in the kidneys and thyroid gland.

In 13 of 21 random sections of lung, alveoli were filled with opaque, granular, eosinophilic material. In some, acicular spaces were seen as well as a few red blood cells and an occasional lymphocyte (figure 1). Most alveolar septa were normal, but in 2 areas the alveolar lining cells were very prominent with foamy cytoplasm, large hyperchromatic nuclei, and prominent nucleoli. An occasional foamy cell was seen in the granular material filling the alveolar space. This material was strongly PAS-positive and stained brown with phosphotungstic acid hematoxylin stain (PTAH). In the rest of the lung the alveoli were filled with fibrin and/or edema fluid, containing a few macrophages, lymphocytes, and plasma cells. In only a few small areas were polymorphonuclear leukocytes seen. Several colonies of bacilli were also seen in a few sections. In many areas there was an admixture of edema fluid, fibrin, and the eosinophilic granular material described above. The fibrin was most concentrated around the granular material, lying between it and the septal walls. It was easily differentiated from the granular material with the PTAH stain, which stained the fibrin black and the granular material brown. Edema fluid also separated the granular material from the septal walls. The pleura was covered by fibrin in which a few lymphocytes were seen. The bronchioles were filled with edema fluid, and a few contained eosinophilic granular material similar to that seen in the alveoli.

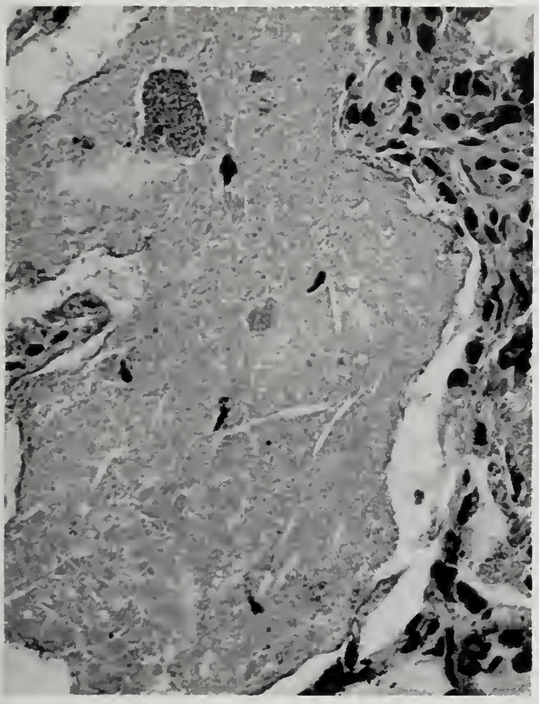

FIG. 1. Alveolar proteinosis.

In pulmonary emboli, in the mural thrombi, and in thrombi in splenic and pancreatic veins large and small, irregular, round eosinophilic cystic bodies were seen (figure 2). They ranged from 7 to 200 microns in diameter, with most 100 microns or less. They were surrounded by a thin membrane which stained red with hematoxylin eosin stain and black with the PTAH stain. The internal structure stained red with both stains and was strikingly vacuolated. No lipid could be found with fat stains of frozen sections of the mural thrombi. The bodies stained very weakly with the periodic acid Schiff stain but did not stain with the Gomori methenamine silver stain for fungi. In addition to round forms sections also contained irregular, elongated, oval forms (figure 3). Sections of the other organs were normal. Cultures of lung tissue for tubercle bacilli and for fungi were negative. Death appeared to be due to extensive alveolar proteinosis with superimposed bronchopneumonia.

Discussion

Speculation about the possible etiologic relationship of alveolar proteinosis and leukemia, diseases of unknown etiology, is difficult, and the association may just be fortuitous. Review of the literature reveals that 5 of the approximately 85 reported cases of alveolar proteinosis were associated with a blood dyscrasia, which suggests that some obscure interrelationship may exist. The associated hematologic diseases are quite varied and include chronic granulocytic leukemia,[2] chronic leukopenia of unknown etiology,[2] polycythemia vera,[3] atypical acute leukemia with megakaryocytic proliferation,[4] and hypoplastic anemia with eosinophilia and basophilia.[5] The development of alveolar proteinosis can not be related to any therapeutic agent used to treat these hematologic disorders, since the onset of alveolar proteinosis preceded the development of hematologic disease in 2 of the cases. The possibility does exist that the diseased lung may be a portal of entry for a virus which in turn produced the hematologic diseases. Since the hematologic disorder preceded the onset of pulmonary disease in our case and in 2 of the previously reported cases, this would appear to be unlikely unless a small subclinical focus of alveolar proteinosis was present before the onset of the hematologic disease.

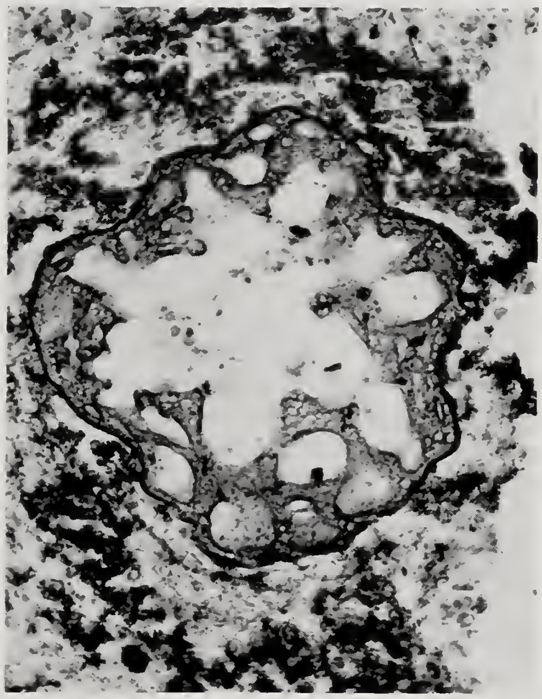

FIG. 2. Cystic body in thrombus.

The distribution of thrombi in this case is

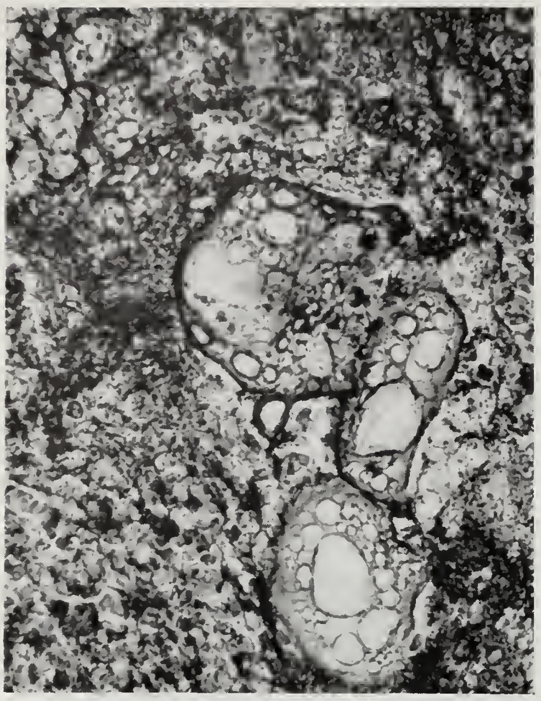

FIG. 3. Cytic body in thrombus.

most unusual. The pulmonary emboli and the right atrial mural thrombus could have been due to the episodes of atrial fibrillation, but the mural thrombus on the right ventricle wall without underlying endocardial or myocardial lesions and the thrombi in the apparently normal portal, splenic, and pancreatic veins are harder to explain. All of these thrombi contained numerous cystic eosinophilic bodies, and at first it was thought that these might be cross sections of a larva or a peculiar fungus which had resulted in the formation of the thrombi. Consultations with a parasitologist[6] and with pathologists at the Leonard Wood Memorial and the Armed Forces Institute of Pathology, who are experts in infectious diseases, lead us to conclude that they do not resemble any known infectious agent.[7] They have not been seen in other cases of alveolar proteinosis[8] and to our knowledge have not previously been described.

The presence of these bodies in thrombi suggested that they may represent a peculiar alteration of fibrin. This does not seem likely, since only their outer surface stains like fibrin with PTAH stain; the inner vacuolated portion does not. This suggests that fibrin has been deposited around these bodies but is not present within them.

Summary

The clinical and postmortem findings in a case of chronic lymphatic leukemia complicated by the development of pulmonary alveolar proteinosis have been described. This is the sixth reported case of blood dyscrasia associated with alveolar proteinosis, but the etiologic interrelationships remain obscure. Peculiar cystic structures were found in many thrombi. These have not been seen in other cases of alveolar proteinosis, nor have they been described previously. Their exact nature is not known.

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Survey for Chronic Obstructive Lung Disease in a Clinic Population*

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CHRONIC OBSTRUCTIVE LUNG DISEASE is increasing in frequency both as a cause of death and severe disability. Indeed, this group of diseases appears to be second only to those of the circulatory system as a cause of disability.[1, 2]

Early detection of these diseases should be an important starting point for their amelioration or cure. Previous studies have indicated the utility, for detection purposes, of ventilatory tests and questionnaires employed in occupationally and geographically selected groups.[3–8]

The aim of the current study was to obtain prevalence data regarding abnormal physiologic findings and correlation of the data with symptoms usually interpreted as indicative of pulmonary disease. This was germane because the National Tuberculosis Association had launched a public campaign for publicizing "RD" (respiratory disease) with the slogans "chronic cough" and "shortness of breath." Subjects with either symptom were advised to see their doctors because they might have RD.

Subjects

The study consisted of a survey by means of a questionnaire and by ventilatory lung function tests of patients who attended the outpatient clinics of the George Washington University Hospital.

By definition the patients in a clinic do not represent a randomly selected group of Washingtonians. Their attendance at the clinic indicated that they at least felt that they had health problems, and in fact they usually did have definitely diagnosed, nonpulmonary disease. Attendance at the clinic also categorized the subjects in a low socioeconomic and educational status.

Two hundred males and 200 females were examined during the period from June to September 1963. The mean age for the females was 55 years and for males, 54 years. The age distribution was similar in each sex with peak frequency in the fifth and sixth decades.

The relative weight was calculated for each person. (Relative weight = patient's weight/desirable weight of patient × 100 for sex and height).[9] Underweight was not as frequent as overweight, with only 2.5 per cent of females

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* Research supported in part by Vocational Rehabilitation Administration Grant RD-1013-M and by the District of Columbia Tuberculosis Association.

and 11.5 per cent of males under 90 per cent of ideal weight, whereas 60.5 per cent of females and 28 per cent of males were more than 120 per cent of their ideal weight.

Method

Each person seen at the outpatient clinic was regarded as a candidate for the survey. If a pulmonary diagnosis had been made, the patient was excluded. All others were included.

The examining team consisted of a physician and a technician, with the physician asking the questions, recording the answers, and supervising the spirometry. The technician assisted in spirometry and performed the tasks necessary for making simultaneous tape recordings suitable for computer analysis. The latter has been reported elsewhere.[10]

The questionnaire was deliberately brief in order not to interfere with the outpatient clinic functions. The data recorded included sex, age, height, weight, clinics attended, major diagnoses, the presence of chronic cough or shortness of breath, and smoking habits. The term "chronic cough" was not further clarified for the patient if he asked for clarification except to state, "If you heard a radio announcer saying something about people with chronic cough, would you regard yourself as included by that announcement?" The same answer was employed for defining shortness of breath. For those who answered affirmatively further quantification was made in terms of flights of steps tolerated.

Following the questionnaire, spirometry was done with a 9-liter Collins spirometer. The basic maneuver was forced expiratory vital capacity. This was performed a minimum of 2 times and if these efforts were not satisfactory they were repeated until a satisfactory tracing was made. In 11 cases no satisfactory record could be obtained, and the patients were excluded from the survey. The usual cause for rejection was senility and low intelligence, but it is thought that these must be extreme in degree in order for a patient to fail to perform satisfactorily. The following parameters were measured in each tracing: total vital capacity (VC); the FEV$_1$* sec.; the FEV$_3$ sec.; maximum midexpiratory flow (MMEF), and MEFR†$_{200-1200}$. The VC was expressed as a percentage of the predicted value with the formula of Baldwin et al.[11]

The definition of the level of abnormal FEV was arbitrary. It was based upon our own clinical and laboratory experiences over a 10-year period and the original paper by Gaensler.[12] Others also have used the value of 70 per cent (Los Angeles Survey), while some (Santa Clara Survey) have used 65 per cent in an effort to keep the number of false positives to a minimum. If one used the lower value, the number of false negatives is increased.

The spirographic and the clinical data were then transferred to punch cards for statistical analysis. Differences in percentages were tested by "t" test for given degrees of freedom at the 5 per cent level.

Results

Shortness of breath. Forty-nine and five-tenths per cent of females and 30.0 per cent of males replied affirmatively regarding shortness of breath (table 1). In an attempt to be more quantitative the term "significant" was applied to those who indicated shortness of breath after 2 flights and "severe" to those who indicated it after 1 flight or less. In females, "significant" shortness of breath occurred in 41.5 per cent and "severe" in 27 per cent, in males 22 per cent and 18.5 per cent, respectively. Thus, females had a higher percentage of "shortness of breath" in each category.

TABLE 1: Symptoms and Ventilatory Measurements of Hospital Outpatients by Age and Sex

VENTILATORY MEASUREMENTS AND SYMPTOMS	FEMALE			MALE		
	Total (N* = 200) Per cent	Under 40 (N = 28) Per cent	Over 40 (N = 172) Per cent	Total (N = 200) Per cent	Under 40 (N = 41) Per cent	Over 40 (N = 159) Per cent
FEV$_{1.0}$ under 70 per cent	18	7.1	19.8	31.5	22.0	34.0
Shortness of breath						
Yes	49.5	57.1	48.3	30.0	9.8	36.1
Significant	41.5	46.4	40.7	22.0	2.4	27.7
Severe	27.0	32.1	26.2	18.5	2.4	23.2
Chronic cough	12.0	14.3	11.6	10.0	9.8	10.1

* Number of subjects.

In terms of age, the shortness of breath occurred slightly more often in females under 40 than in those over this age. In males it was more frequent in those over 40. In each degree of shortness of breath this relationship to age persisted for each sex. The relationship of shortness of breath to $\mathrm{FEV}_{1.0}$ values is presented in table 2. Of the females whose $\mathrm{FEV}_{1.0}$ was above 70 per cent, 48.2 per cent complained of shortness of breath, and 55.6 per cent of those with values below the 70 per cent level did so. Among males whose $\mathrm{FEV}_{1.0}$ was above 70 per cent, 27.7 per cent complained of dyspnea, and 34.9 per cent of those whose value was below the level complained of it. This relationship to $\mathrm{FEV}_{1.0}$ persisted for all degrees of dyspnea. There was a small, but not statistically significant, increment in complaints of dyspnea among patients with $\mathrm{FEV}_{1.0}$ under 70 per cent.

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* Forced expiratory volume.

† Maximum expiratory flow rate.

TABLE 2: Relationship of $\mathrm{FEV}_{1.0}$ to Dyspnea and Chronic Cough

SYMPTOMS	FEMALE		MALE	
	$\mathrm{FEV}_{1.0}$ less than 70 per cent (N* = 36) Per cent	$\mathrm{FEV}_{1.0}$ over 70 per cent (N = 164) Per cent	$\mathrm{FEV}_{1.0}$ less than 70 per cent (N = 63) Per cent	$\mathrm{FEV}_{1.0}$ over 70 per cent (N = 137) Per cent
Shortness of breath				
Yes	55.6	48.2	34.9	27.7
Significant	47.2	40.2	23.8	21.2
Severe	33.3	26.2	22.2	16.8
Chronic cough				
Yes	22.2	9.8	15.9	7.3

* Number of subjects.

Chronic cough. Twelve per cent of females and 10 per cent of males responded affirmatively to the question on chronic cough (table 1). Among females over 40 years of age, 14.5 per cent had chronic cough, compared with 11.6 per cent of those under 40. Of the males, 10.1 per cent of those under 40 had chronic cough. Thus, there was no significant relationship between age and this complaint.

The relationship of chronic cough to the $\mathrm{FEV}_{1.0}$ values is presented (table 2). Of females with $\mathrm{FEV}_{1.0}$ over 70 per cent, 9.8 per cent had chronic cough, while in those with ventilatory tests below this level, 22.2 per cent had chronic cough. In males the percentages were 7.3 and 15.9, respectively. Thus, chronic cough occurred slightly more often in females than in males and was increased in persons whose $\mathrm{FEV}_{1.0}$ was under 70 per cent. This relationship to $\mathrm{FEV}_{1.0}$ under 70 per cent was statistically significant.

Spirographic data. The findings in $\mathrm{FEV}_{1.0}$, expressed as percentage of total forced vital capacity, are shown in table 1. Using 70 per cent as the screening level for selecting those who had ventilatory defect, 18 per cent of the females and 31.5 per cent of the males were found to be abnormal. The effect of age upon frequency of abnormality was also studied. In females under 40 years of age 7.1 per cent had abnormal tests, while in those over 40, 19.8 per cent were abnormal. In males under 40 years of age the per cent abnormal was 22, and in those over 40, 34 per cent. Thus, abnormal values occurred more often in males and in persons over 40.

Discussion

That shortness of breath in each degree tested was substantially more common in females than in males is in marked contrast with the ventilatory tests. Furthermore, the shortness of breath occurred more often in females under 40, in contrast with the preponderance of abnormal $\mathrm{FEV}_{1.0}$ in females over 40. These findings suggest that factors other than chronic obstructive lung disease may be the important causes of "shortness of breath" in females. The possibilities which should be considered include cardiovascular disease, obesity, and psychologic disorders. In the latter category, hyperventilation syndrome, hypochondriasis, and the idea that more complaints might result in increased attention may well be component factors.

Chronic cough also occurred more often in females than in males and was a complaint more of young females than of females above 40. However, in both sexes those with abnormal spirograms had this complaint in a significantly greater number than those with normal spirograms. Thus, chronic cough, unlike shortness of breath, is significantly associated with abnormal tests.

It appears then that the "shortness of breath" type of public campaign might not be of any value in detecting patients with chronic obstructive lung disease in the clinic group tested. The "chronic cough" part of the phrase is more likely to be valid. For this reason, in planning a survey an assessment of the nature of the population might be important in selecting key signs.

Judging by the number of abnormal ventilatory tests, our data indicate a substantial number of patients with undiagnosed chronic obstructive lung disease in the clinic population under study. Abnormal tests were more common in males than in females and in persons over 40. While ventilatory tests are useful, it is important to realize that they are not objective to the same extent as electrocardiograms or blood tests. They require maximal effort, and this immediately brings into play subjective factors such as practice, coöperation, and motivation. Indeed, Becker[13] found that a substantial number of patients with abnormal tests had normal values when retested. Once an abnormal test is obtained, the clinician must evaluate its meaning and specificity. This is not different from the report of a low hemoglobin, a test which is "objective." Such a finding might be the result of laboratory error, malignant disease, ulcer, leukemia, or pernicious anemia, to name but a few. Thus, mature clinical judgment and repeated and possibly more detailed pulmonary function tests are required in order to interpret the results of this type of survey with respect to any single individual.

Another question which seems reasonable is whether the early finding of patients with obstructive lung disease can be translated into effective therapy. In asthma and bronchitis the disease process may be reversed, and in true parenchymal emphysema some palliation may be obtained. Other studies,[14] however, have demonstrated that, even in patients with advanced chronic obstructive lung disease, available means of therapy may often be inadequately and ineffectively employed. Thus, in order to decrease disability due to these diseases, improvement in treatment as well as in diagnosis will be required.

Summary

Although the symptom "shortness of breath" in a Washington clinic population was not significantly associated with abnormal spirometric measurements, the symptom of "chronic cough" did have significant statistical correlation with abnormal spirometrics.

A substantial number of cases of undiagnosed chronic obstructive lung disease can be detected by routine spirometric tests.

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Patients Needed for Clinic Studies

The coöperation of physicians is requested in continuing studies of patients with Ewing's sarcoma, metastatic lung disease, or Hodgkin's disease by the Radiation Branch of the National Cancer Institute at the Clinical Center of the National Institutes of Health.

Ewing's sarcoma. Referrals of patients with a presumptive radiographic diagnosis of a malignant bone tumor are needed. It is desired that such patients be referred prior to establishment of the diagnosis by biopsy in order that they may be admitted for biopsy and immediate institution of therapy.

Hodgkin's disease. It is desired that patients with histologically proven Hodgkin's disease be referred prior to treatment in order that they may be admitted for baseline studies prior to radiotherapy. In particular, the referral of patients with disease clinically limited to areas either above or below the diaphragm is requested.

Metastatic lung disease. Referrals of patients with well-defined, measurable, bilateral lung metastases (from any primary site) are needed for radiation therapy studies.

Physicians interested in having their patients considered for any of these studies may write or telephone Ralph E. Johnson, M.D., Clinical Center, Room B1B-41A, National Institutes of Health, Bethesda, Md. 20014; telephone 656-4000, Ext. 65457.

Patient Monitoring

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THE TERM MONITOR is derived from the Latin *monere* which means to warn. Today monitors are being used not only to detect biological phenomena and warn of changes in vital signs but also to make diagnoses. As the result of electronic developments in biomedical engineering arising in conjunction with the Aerospace Program it is now possible to visualize and record a number of vital physiologic processes. The rapid advances in instrumentation have resulted in much confusion concerning monitoring. Physicians unaccustomed to the terminology and "hardware" of electronics are finding it difficult to evaluate instruments and choose those indicated for the desired measurements.

All physicians use their 5 senses to observe and monitor patients, but today more refined measurements can be obtained with instruments. The following criteria must be fulfilled in the selection of monitoring equipment: (1) the physiologic data must be meaningful and accurate; (2) the instruments should be safe, easy to operate and readily serviced; and (3) a permanent record should be produced.

The essentials of a monitoring system consist of a sensor which detects the physiologic process to be measured and converts it into a physical signal, usually electrical. The signal is then amplified and displayed either as a visual analogue, written verbal record, or printed digital record. To complete the monitoring system the data should be recorded in a form that can be automatically analyzed. This can best be done on magnetic tape or discs. It is impractical to use direct writing or photographic systems for prolonged recordings and storage of data. On magnetic tape data can be obtained by an off-line technique, later visualized on an oscilloscope, edited, significant data recorded graphically, and automatically analyzed by a digital computer.[1] Computer analysis of the electrocardiogram is now being done at the George Washington University Hospital in conjunction with the United States Public Health Service Instrumentation Branch under the direction of Cesar A. Caceres, M.D.[2] Other physiologic data are also being analyzed automatically by digital computers which can rapidly and precisely determine measurements and their interrelationships.

In the new George Washington University Hospital operating suite now under construction physiologic monitoring of patients in all operating and recovery rooms with 2 central control rooms has been planned. In order to study the value of central monitoring in the operating rooms, to ascertain what phenomena should be measured, and how this could best be done and which patients should be monitored, a pilot study was undertaken with a grant from the Fannie E. Rippel Foundation. In our present operating-room facilities 4 operating rooms and a central monitoring room are equipped. Six-channel Sanborn Viso-scopes were installed in each of 4 operating rooms. In the central monitoring room an 8-channel Viso-scope, a direct photographic writer, and a 16-channel tape deck for recording the data complete the instrumentation. A recovery-room nurse has been trained as the monitoring technician. She connects the patients to the electronic instruments, observes, and records the data in the central monitoring room. Electronic instruments are not now available to meet the criteria for the measurement of all physiologic processes, but these are rapidly being developed. At the present time we are continuously monitoring and recording ECG, EEG, peripheral pulse curve, temperature, and direct venous and arterial pressures. Other data obtained by intermittent sampling include blood volume, pO_2, blood O_2 saturation, pCO_2, pH, and cardiac output.

Initially the use of electronic instruments to monitor patients was limited to specific indications, such as on patients with cardiorespiratory disease, or for special surgical techniques.

Central monitoring in our experience has been sufficiently rewarding to justify the expansion of physiologic monitoring to many more patients. Approximately 13,000 anesthetics are administered in the George Washington University Hospital each year. Accumulation of data from these patients will enable programming for computer analysis by the personnel and facilities of the U. S. Public Health Service Computer Center located in the George Washington University Engineering School. Analysis of data may enable recognition of impending problems prior to the time that they become clinically obvious. Expansion of monitoring to include respiratory and anesthetic gas measurements, as well as pH, should make possible instantaneous and continuous analysis of physiologic changes. These can be coördinated and interpreted by means of computers to give an integrated and decipherable record of a patient's progress during anesthesia and surgery. By the collection and cataloging of data a vast library of physiologic information can be made available for retrospective studies, teaching, and research. Operating rooms can thus become laboratories, eliminating the species error in transferring data from the experimental animal to man.

Monitoring has been shown to be practical in the operating rooms. Similar monitoring is also indicated for postanesthetic recovery rooms, special care units, and labor rooms. In these areas, however, further research in instrumentation aimed at eliminating problems created by movement of the patient remains to be done. All patients who are critically ill and those who have had major surgical procedures should be followed by physiologic monitors. With computer analysis and written read-outs lending continuity to their records, a minute-to-minute observation is possible with early recognition of physiologic changes which can be treated promptly.

Monitoring is of value for patients who require close observation during extensive surgical procedures as well as for research studies. Patients with cardiorespiratory diseases should be monitored during and following surgery. Continuous observation of vital signs of patients with acute myocardial infarction in special care units will permit prompt management of cardiovascular crises. Surgical procedures with the pump-oxygenator, hypothermia, and major vascular surgery are more safely done with monitoring used to detect and measure vital signs.

The following case report illustrates the value of monitoring. A patient with arteriosclerotic heart disease recently in congestive heart failure, for which she had been digitalized, was scheduled for a major surgical procedure. Anesthesia consisted of induction with thiopental sodium with N_2O and O_2 for maintenance. Succinylcholine was given to achieve muscle relaxation for endotracheal intubation. At this time the patient developed tachycardia with a rate of 120 to 140 per minute. Clinically, this was an increase in heart rate attributable to any number of causes. However, continuous ECG recording enabled diagnosis of this as a bidirectional ventricular tachycardia (figure 1). This rare but serious manifestation of digitalis toxicity was due to enhancement of digitalis effect by the muscle relaxant drug.[3] This was promptly corrected with curare, and the surgery was rescheduled for a later date.[4] The patient was subsequently anesthetized and operated upon without further difficulty. Without monitoring this diagnosis could not have been made and a fatality would probably have resulted.[5]

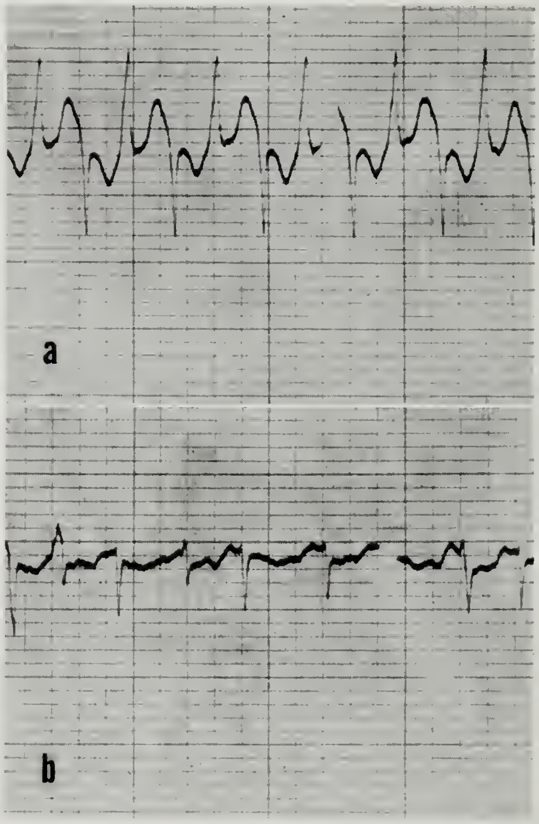

FIG. 1. (a) Bidirectional ventricular tachycardia following succinylcholine administration; (b) correction of bidirectional tachycardia following administration of curare.

(*Continued on page 252*)

Transplantation Immunology*

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THE WHOLE FIELD OF TRANSPLANTATION has grown out of the need for organ and tissue replacement in disease states (i.e., chronic liver and pulmonary insufficiency, acute and chronic renal decompensation, and occlusive vascular disease) which have become commonplace in clinical medicine today. Success in the production of adequate, supportive cardiopulmonary systems and artificial kidneys has stimulated work designed for improvement of efficiency and miniaturization of these elements with the hope of placing them as isolated units within the ambulatory patient.

Despite the promise of success in the development of artificial devices, there exists a simultaneous effort attempting tissue and organ replacement with biological material from homologous and heterologous donors. Bone, blood vessel, and cornea were the first tissues successfully transplanted. This material represents a unique biological situation, however, in that these tissues do not normally become vascularized in the host; they serve ultimately (with the exception of cornea) as only supportive structures in the host, and they are relatively easy to obtain from the donor and store without loss of function.[1] Transplantation of whole organs or large masses of tissue, such as skin and kidney, present an entirely different complex of problems.

Terminology

The *autograft* is a graft in which the recipient is the donor. The *isograft* is a graft between identical individuals (i.e., twins). An *allograft* (homograft) is a graft between genetically dissimilar members of the same species. A *xenograft* (heterograft) is a graft between dissimilar species. *Orthotopic* describes normal anatomic placement of a graft. *Heterotopic* refers to all other unnatural recipient locations.[2]

Physiology and Immunology

With the exception of some gross physiologic parameters, we know very little about the effects of transplantation per se on the organs involved. What little evidence is available indicates that the operative procedure is not without serious consequences in many instances. For example, severe blood flow alterations in the transplanted organ are not uncommon following the inevitable period of surgical ischemia during the removal and implantation process. However, we do know that properly handled autologous tissue can be transplanted without loss of function or significant change. Skin, for instance, either for split or full-thickness grafts can be readily moved about the body provided that the graft bed is clean and that the graft is held in close approximation to the bed. Vascularization will occur within 2 to 3 days, and the tissue does well.[3] There can be autologous graft mortality from ischemia, but with strict adherence to physiologic principles one can expect virtually 100 per cent survival.

Not so encouraging is the survival of foreign protoplasm in a recipient. Allogenic grafts survive initially with full vigor by both morphologic and functional criteria in a state entirely indistinguishable from autografts. Unfortunately, after 3 to 4 days serologic alterations appear in the host which herald the morphologic changes usually first seen by the fourth or fifth day. These morphologic changes occur in a definite pattern with early perivascular round-cell infiltration, endothelial-cell swelling, increased vascular permeability, interstitial edema, small-vessel disintegration and/or occlusion, and finally hemorrhagic infarction and complete necrosis by the ninth day.[4]

This complex response necessary to overwhelm the normal process of healing is based on an immunologic phenomenon, probably of the delayed hypersensitivity type due to the form of established latent periods necessary for rejection.[5, 6] Furthermore, one can demonstrate a second-set phenomenon or accelerated rejection pattern in recipients grafted on successive occasions with material from the same donor, and this reaction is antigen-specific.[7]

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* Research was done while a guest scientist at the Naval Medical Research Institute, Bethesda, Md., and was supported by a student research scholarship through the Department of Surgery, George Washington University School of Medicine.

The immune rejection is thus a feedback mechanism consisting of an afferent limb of antigenic contact with sensitization and an efferent limb of antibody response. The immunologic arc varies considerably with the afferent route of antigenic stimulation. Intraperitoneal and intradermal routes are roughly similar, sensitizing rapidly in 2 to 3 days, whereas the subcutaneous and intravenous routes are much less effective.[2]

Exposure to the regional lymph nodes seems to be the difference between these 2 basic routes of afferent stimulation. It has been shown that specific reactivity first appears in the regional lymph nodes draining allogenic skin grafts.[8] A regional immunologic transaction has been suggested to precede the generalized hypersensitivity state. Such a transaction might consist of local antigen "processing" by macrophages prior to systemic exposure[9]; some in vitro experiments would support this.

Just what is this "transplantation antigen"? No one yet knows, but great efforts are in progress presently to identify the substance(s). Ultracentrifugation of subcellular fractions yields such small quantities that it has been very difficult to study. Some workers have shown, however, that in tissue culture they get greater sensitization with exposure to certain microsomal fractions than with any other; this suggests the importance of RNA.[10] Other workers stress the nuclear fragments of the donor material and postulate the antigen formation as a DNA-mucopolysaccharide-protein complex not unlike the major blood group antigens.[11, 12] Still others say a lipoprotein complex is involved.[13] Suffice it to say, the antigen is generally accepted to be several factors, some of which appear to be sex-linked,[14, 15] but none of which appear to be tissue-type specific. Rather the antigen is individual-specific apparently contained in all cells and equally capable of host stimulation and sensitization.

The efferent limb is about as poorly understood, but we know it consists of 2 basic reactions with possibly a third area to be considered. For the skin graft we essentially find a local cellular response and a systemic humoral response. It is assumed that early elaboration of the transplantation antigen is first encountered by the local small lymphocyte and its regional lymph nodes. Whether the local system is capable of initiating the rejection phenomenon by quick formation of antibodies has not been determined. It is known, however, that the local lymphatic system does retain the antigen for a short few days before the host is sensitized.[16] It is also possible that this local cellular reaction elaborates a substance which serves to more quickly sensitize the host. This local cellular reaction does not occur with renal transplantation, because the only mode of afferent stimulation is through the vascular anastomosis. If the organ is not perfused before grafting, however, it has been shown that the donor blood-cellular elements, namely the leukocytes, will act on entering the host to speed up the sensitization, and likewise, their removal will prolong rejection.[17]

Although we know that the humoral antibodies can be detected in very low titer as early as the fourth day,[18] we also know that with the development of a competent vasculature a marked increase in the number of local lymphocytes is also noted.[19, 20] Presumably the early local reaction could produce a substance which directs cellular migration. However, experimental evidence does not support this latter theory.

Actually, the humoral antibody has never been thought to contribute significantly to the local cellular response and rejection, for it does not reach its peak titer until fully a week or more after total slough has occurred. Two early experiments supported this attitude of humoral unimportance. One was the repeated failure to transfer sensitivity by transfer of serum at its peak humoral titer,[21] while sensitized lymphocytes transferred sensitivity every time. Just recently, however, humoral transfer of sensitivity has occurred when serum collected at the peak of graft rejection was used instead. Secondly, isolated diffusion chambers (Millipore® filters), which separated the graft from the cellular response but not from the humoral agents, were employed to demonstrate graft survival in the presence of humoral agents.[22] Their results were significant until recently when it was found that these filters became plugged easily with calcium salts and actually transmitted the humoral antibodies poorly. With recent modifications to assure adequate penetration of the antibody it has been shown that some grafts are destroyed.[23] Thus, the humoral agents may play a significant role in the complex phenomenon of allograft rejection, especially since no graft seems to be rejected until the vascular channels are established permitting the arrival of cells, antibodies, or possibly cell-bound antibodies.[24]

It is this latter complex which may shed new light on the subject of allograft rejection. Just recently cytophilic antibodies have been demonstrated in association with spleen cells,[24, 25] and current studies are attempting to identify gamma globulins connected to the migrating cells arriving at the graft site.[26]

When the key is found to unlock the efferent loop we will be better able to study the afferent loop and by then will be well on the way to a basic understanding of the immunology of tissue transplantation. Nature herself has provided certain exceptions to this immunologic arc which are worth consideration.

Several peculiar areas regularly accept allografts. Much work has gone into their study in an effort to understand their tolerance. These areas with the present-day explanation are now mentioned. 1. The anterior chamber of the eye has a diminished ability to incite an immunologic reaction.[27] 2. The substantia propria of the cornea permits survival as long as vascularization does not occur.[28] 3. The meninges of the brain allow survival because of lack of direct vascular supply.[27] 4. The testis permits growth, due probably to unusual lymphatic drainage of the organ which must reach the kidney before encountering its first regular lymph node.[2] 5. The hamster cheek pouch somehow impedes the afferent limb for sensitization of the host.[29]

Alteration in Recipient Response

Many different methods have been attempted to alter this immunologic rejection by depressing the host response, and many of these have proved of some temporary value. These various modes of host alteration are presented below.

Lymphatic ablation. Many approaches have been attempted, including splenectomy, lymphoid surgical removal, reticulo-endothelial-system (RES) blockade, thoracic-duct fistula, antilymphocyte serum, and selective irradiation of lymphoid structures with yttrium-90 or a beta-emitting capsule in the right atrium. Splenectomy suppresses humoral antibody formation but does not increase survival.[30, 31] Removal of lymph nodes (especially regional nodes) along with the graft within 4 days after allografting leaves the system unsensitized, while regional lymph-node extraction at the time of allografting significantly prolongs graft survival.[32] Blockade of the RES by means of large doses of substances such as trypan blue so depresses phagocytosis of antigen that antibody formation is greatly prolonged.[33, 34] The effect of thoracic-duct external drainage prolongs survival of allografts, but the effect is limited.[35] The antilymphocyte serum produces not only a lymphopenia but is thought also to alter the immunologic capacity of the lymphocyte.[36] These latter 2 procedures have a certain inherent mortality, and both are only temporary. Selective irradiation with the beta capsule in the right atrium effectively depletes the lymphoid tissue without side-effects,[37] but transplantation application awaits trial.

Immunologic tolerance. Medawar[38] defines tolerance as "a specific central failure of the mechanism of immunologic response brought about by exposure of animals to antigenic stimuli before maturation of the faculty of immunological response." There appears to be a direct relationship between the amount of antigen injected initially and the degree and duration of reduced antibody formation.[39] The tolerance-response period is shortly after birth and may last up to 2 weeks. Recently adult mice have been made tolerant because of genetic differences of only weak histocompatibility loci.[40] Large doses of viable spleen cells were injected to produce tolerance.[41] Neonates also have immunologically competent cells but just fewer of them than has the adult.[42] More recently cell-free extracts of donor tissues have been successfully employed to induce tolerance.[43] This is highly significant, since the possibility now arises that the tolerance state once induced may be self-sustained by slow leakage from the allograft of the same cell-free extract. Before this system could be applied to human newborns certain ethical questions would need to be answered.

Graft-versus-host reaction (Runt disease). This condition is an immunologic attack of a grafted-cell population against the host.[44] This occurs when a hybrid offspring is unable to reject a graft from a homozygous parent because the hybrid contains all of the homozygous genes. On the other hand, the recipient contains antigens foreign to the graft from the other parent, and the viable cells of the graft then produce antibodies against the host tissues. This must occur early in life, and the resulting deformity is a blighted offspring which will die after 3 to 4 months.[45]

Enhancement. "The successful establishment, or delayed rejection of an allograft, as a consequence of the presence of specific antiserum in the host" is a definition of enhancement.[46] Apparently a passive immunization with lyophilized tissue stimulates a good humoral response but fails to provoke the cellular response.[47] The antigraft antibody reacts with the elaborated antigen, and sensitization of the host fails or is at least delayed. The dose for immunization is critical.[48]

Radiation and radiation chimerism. Total-body irradiation, up to 48 hours prior to primary antigenic challenge, affords the maximum depression of antibody production.[49] After sensitization, radiation is essentially worthless. Shielding the spleen during the irradiation procedure markedly decreases the post-irradiation mortality.[50] Total roentgen dosage of 400 to 1,500 r is recommended for hematopoietic ablation, and production of chimeras occurs when the bone marrow is replaced by direct allograft.[51] Bone-marrow replacement is best done within 5 to 48 hours after completion of a single dose of whole-body irradiation.[52]

Thymectomy. This procedure in neonates inhibits lymphocyte production completely.[53] Allografts do well until the animal dies in 3 to 4 months of a wasting disease.[54] These deficiencies can be repaired by lymphoid-cell injection from normal mice or thymus implants.[55] The significant aspect is not the gland's elaboration of small lymphocytes but rather the apparent humoral factor it produces to allow lymphoid-tissue maintenance as seen when the gland is isolated in a filter chamber.[56, 57]

Chemotherapeutic modifications. This area has enjoyed the greatest clinical application, and although the long-term results in humans have not been particularly impressive, a number of experimental animal results have provided repeated impetus to the intensive search for drugs capable of inhibiting the allogenic response. Steroids alone and with other drugs prolong survival only slightly.[58] Antimetabolites, notably Imuran® (azathioprine), in combination with azaserine have provided prolonged survivals in both man and animals.[59] Encouragingly, several allografted dogs in a recent Boston series have been able to "back off" the drugs completely after periods of therapy up to 18 months.[60] 6-MP[61] and Methotrexate®[62] were not nearly as effective. Alkylating agents have proved to be too toxic in doses necessary to suppress the immune response.[63] However, both alkylates and antimetabolites are more effective if given with the antigen and several days following than if administered before grafting.[64] Antibiotics claim only actinomycin D effective in its action of blocking nucleic-acid metabolism in vivo. With messenger RNA blocked protein synthesis is delayed with the bonus of antibody suppression temporarily.[65] Vincristine and vinblastine are effective suppressors of lymphoid neoplasms and will apparently be of importance in transplantation also, though their use to date has been limited.[66]

Graft adaptation. Some allografts after long-term acceptance in a tolerated site (i.e., anterior chamber of the eye) have been retransplanted to subcutaneous sites, where they remained viable and functioning.[67] This loss of vulnerability has also been seen in renal (dog) transplants in which a dog after long-term immunosuppressive therapy is able to stop the drug completely without rejection.[60] Furthermore, several of these dogs have been challenged with the second kidney from the original donor, and they have rejected the second kidney while continuing to use the long-tolerated allograft.

Immunologic deficiency diseases. Several attempts to demonstrate allograft acceptance in agammaglobulinemia have failed, suggesting that in the human, at least, allograft immunity is not dependent on normal levels of circulating gamma globulin or the ability to produce humoral antibodies as we know them.[68]

Alteration of Donor Tissue

Comparatively few attempts have been made toward modifying the graft antigenicity. These are mentioned now. Skin grafts have enjoyed indefinite survival times after trypsin treatment combined with alternate freezing and thawing. Because their cellular elements are largely destroyed in the process, these function only as protective covering and supportive structure for the host.[69] Freezing of whole organs such as the kidney will reduce its antigenicity but only at the sacrifice of significant function. Graft radiation has little to support it. Recent results have suggested the possibility of prolonging the survival of skin allografts with pregrafting exposure to recipient nucleic acids.[70] This offers the exciting possibility of changing the basic genetic components of donor material to enhance histocompatibility with regard to the recipient.

Transplantation—Today and Tomorrow

Several technical areas will need further investigation should the immunologic barrier ever be broken. These will include donor selection, tissue storage and preservation without loss of function, and surgical skills to perform the procedure.

The area of surgical handicraft has advanced ahead of all others in this field, primarily because of the advances made in the instrumentation and surgical skills attending vascular anastomosis. Although some improvements in technique are still necessary, surgical feasibility in transplantation is guaranteed for just about any organ in the very near future.

A successful program in transplantation will rest heavily on the availability of biologic material, the adequate function of which in the host has been insured by appropriate preservation procedures. Despite the success in freezing and freeze-drying of bone, blood vessel, and most recently blood and blood products, we do not have adequate methods on hand to meet this need. We have only recently become aware of the fact that the vascular structure of an organ may behave quite differently with regard to a given preservation technique when compared to the parenchymal elements. Requirements for storage methods, therefore, become more complicated as we begin to treat these 2 components in a differential fashion. Advances are being made, and encouraging results have been reported from research in supercooling and freezing of whole organs pretreated with glycerol or dimethylsulfoxide. Just recently it has been possible with the differential treatment of these 2 tissue elements to freeze whole kidneys to −30° C for longer than ½ hour and, on thawing and autografting back to the dog, to obtain better than 50 per cent survival.[1] This success offers tremendous possibilities for the future hope of organ storage with preservation of function.

The use of living donor material or that obtained from cadavers has presented immunologic problems of some interest. It has become increasingly evident that the donor must meet several immunologic criteria if a successful graft is to be anticipated. Besides major blood-group incompatibilities between donor and recipient, Rh subgroup factors and the previous immunologic experience peculiar to the individuals involved probably play an important role in the rejection phenomenon.[71]

Just what are the vital statistics achieved so far in experimental and clinical organ transplantation? Kidneys have enjoyed the greatest success with survival times over 2 years when the host has received immunosuppressive drug therapy. Lung transplants in dogs have survived as long as 154 days, while liver transplants have lasted 2 to 3 weeks. One dog has gone over 9 months with an allografted heart which he received at an early age.[71]

Despite the successes in these areas, the future for clinical transplantation remains clouded. A review of the most recent human clinical literature indicates that, at most, only 10 per cent of kidney transplants are alive after 2 years, and 90 per cent of these are in monozygotic twins. There have been no long-term survivors with heart, lung, or liver transplants. However, investigation into the reasons for lack of success has demonstrated that in several areas the problems are not insurmountable. Any major breakthrough in the immunology area will dramatically change this picture.

N.B. This article was first written for my fellow students in order to introduce them to the general endeavors in the field of transplantation. It became apparent that the summary here presented may also be of some interest to the physician not directly acquainted with this area. I must call attention to the excellent review of this subject by P. S. Russell and A. P. Monaco in the September and October issues of the *New England Journal of Medicine* (vol. 271, nos. 10–15, 1964) and for further, more detailed data I would recommend cross-reference with these articles. In capsule form this paper serves only as a simplified preamble to their review.

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Neurology and Neurological Surgery: Its Story at George Washington University*

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As I PAUSE at this sixtieth milestone and play back the magnetic tape that records our memories I am very conscious of my indebtedness to my chiefs, my associates, and our residents. A majority of my publications were written with a co-author. Most of them deal with experimental and clinical conditions under study in the clinic where I was located. My ideas and interests, therefore, have come not from contemplation but from contact and discussion with my colleagues.

Paul Bucy, Harold Stevens, Hugh Fulcher, Manuel Velasco-Suarez, Stuart Rowe, George Hayes and Jack DeVault have presented you with a sketch of me. In every portrait you see the subject but you also see the master who painted it. These speakers were selected by the Birthday Committee because they are old friends, good speakers, and more or less predictable. When my son whispered to the toastmaster, requesting permission to make a few remarks, Dr. Bucy expressed my deepest feelings, and, I suspect, those of many in the audience when he introduced Winston: "Everything has been predictable up to this point. Now anything can happen." Winston then made an impromptu speech which was a highlight of the evening.

The spotlight has been on me long enough. I love it, but I would now like to switch it on some of the people with whom I have worked in Washington. Since this celebration was planned by members of our department it seems appropriate to tell you the story of Neurology and Neurological Surgery at George Washington University.

The Department of Neurology was created on June 2, 1932, and Walter Freeman was asked to head the department. Prior to this neurology was taught in the Division of Psychiatry and much time was devoted to the neurologic and psychiatric manifestations of syphilis. A course on surgery of the head and neck, taught by Dr. Harry H. Kerr, included all that was given in neurosurgery. Incidentally, pediatrics and psychiatry also became departments in 1932, having been divisions of the Department of Medicine before that time.

As many of you know, Dr. Harvey Cushing was Chief Consultant in Neurosurgery to the American Expeditionary Forces in Europe in World War I. He asked Dr. Kerr to join him as Assistant Chief, and Dr. Kerr later accompanied him to Europe. The Walter Reed Army Hospital in Washington was made the center for peripheral nerve injuries, and on returning to Washington after the War Harry Kerr, as a consultant, worked with Major Norman Kirk in the operative treatment of peripheral nerve injuries. Kirk later became Surgeon General of the Army. Among his other contributions, Kerr edited the volume on Head Injuries in the A.E.F. with the assistance of Herbert Schoenfeld.

In the late 1920's it was common practice for physicians to be on the staff of both Georgetown and George Washington Schools of Medicine. John J. Shugrue, who trained at the Mayo Clinic, was the first person to devote himself entirely to neurological surgery in Washington. Dr. Shugrue covered the neurosurgical service at the George Washington University Hospital as well as the services at the Georgetown University Hospital and the Georgetown Division at the Gallinger Municipal Hospital (now D. C. General Hospital). Herbert Schoenfeld, who had appointments in both medical schools, was in charge of the George Washington Division at Gallinger Hospital.

The first time neurology appears as a department in the catalogue is 1934, and it lists Walter Freeman as Professor, Herbert Schoenfeld as Associate in Neurosurgery, and H. D.

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* Address (revised) delivered at a dinner, March 13, 1964, held at the Officers Club of the Walter Reed Army Medical Center, Washington, D.C., in honor of my Sixtieth Birthday, January 19, 1964.

Shapiro as Associate in Neurology. In 1935 Walter Freeman invited me to join the Department of Neurology at George Washington University. I shall never forget how gracious Herb Schoenfeld was when I arrived in Washington. He introduced me to members of the staffs at George Washington, Children's, Garfield, and the Gallinger Municipal hospitals and recommended me for privileges, and, remember, I was taking over the neurosurgical service at the University Hospital and the Gallinger Hospital. Schoenfeld then transferred back to the Department of Surgery. He has had a significant influence on neurosurgery in Washington.

In 1935 neurology was taught in the second, third and fourth years. The Saturday afternoon Outpatient Clinic was held in Hall A of the Medical School. Attendance was voluntary; no roll was called, no grades given. Attendance averaged 30 to 35, but I have counted as many as 65 to 70. We were still in the midst of a depression. Walter Freeman was a showman, and medical students often brought their 'dates' (it was cheaper than going to the movies). After examining a patient with a stroke or Parkinson's disease he would march up to the blackboard, pick up a piece of chalk in each hand, draw a coronal section of the brain, using both hands simultaneously, and sketch in the internal capsule and basal ganglia, dotting in the pathologic lesion. The students were fascinated.

Since syphilis of the nervous system was the number one organic disease of the brain and spinal cord at that time, follow-up examinations of the cerebrospinal fluid were necessary. Freeman would have the patient sit backward on a chair with his arms folded over the back and his forehead resting on his arms and do a cisternal puncture. He explained that cisternal puncture was better than a spinal tap because there was no postpuncture headache. He inserted the needle directly into the cisterna magna without pausing to take measurements, meantime explaining that the brain stem was only a few millimeters from the tip of the needle.

I have seen him apparently preoccupied as the history was being given by a medical student. There would be a sudden sweep of his hand; the students became alert, then he would open his hand slowly and allow the fly to escape. Shapiro was the authority on neurosyphilis, and my views prevailed on neurosurgical problems. We have continued the practice of having a neurologist and a neurosurgeon in our weekly George Washington Clinic so that the patient and the student will have the benefits of both points of view.

The Friday Conference at the Gallinger Municipal Hospital had been inaugurated in 1933 or 1934 with Freeman as Chairman. It was attended regularly by Antoine Schneider, a brilliant neurologist and neuroanatomist, who had joined the Georgetown staff as Professor of Neurology the year before. John Shugrue attended occasionally. The Friday Conference is still held each week and is one of the significant features of the Georgetown and George Washington residency training programs in neurological surgery.

Robert H. Groh was the first resident in our department. He was Resident in Neurology at Gallinger in 1938. This included neurosurgery, and he was my first assistant at operations. He aroused the interest of the nurses, improved our service, and, in due time, married our best surgical nurse.

In 1940 neurology acquired a 50-bed unit at Gallinger. Jonathan Williams was on service and the first to bear the title of Resident in Neurosurgery. Jon not only covered neurology and neurosurgery but supervised decorating the neurology wing. He covered the walls of the examining room with diagrams of the brain and spinal cord, showing the various ascending and descending pathways. On discovering that one of his patients had some artistic ability, Dr. Williams gave him the benefit of every recognized type of therapy until he completed the paintings.

In 1942 Dr. James B. Ayer, Professor of Neurology at Harvard and my first chief in neurology, sent a young Mexican to me. His energy and meticulous technique and his care of patients opened my eyes to a Mexico of which I was unaware. Dr. Velasco-Suarez is now Professor of Neurology and Neurological Surgery, Faculty of Medicine, University of Mexico, and Director of the new Hospital Nacional de Neurologia. While in Washington he was a gay young bachelor; whether he got his dynasty complex from Walter Freeman or acquired it independently I do not know, but now Dr. Velasco-Suarez has 11 children. Two of his daughters are spending their vacation in Washington as this paper goes to press.

During World War II our residency program was interrupted; there was a shortage of interns as well as attending staff. No one was assigned regularly to the 50-bed unit at Gallinger. In 1942–43 Harvey Ammerman, then a fourth-year student, served as an extern on neurology. He took all the histories, did the physicals, and then wrote the orders after he completed his daily classes. Two neurosurgeons covered the entire Metropolitan Area.

In 1936 Egas Moniz published his monograph on the treatment of psychoses by means of lobotomy. Freeman's interest in a bold frontal attack on mental disease and my interest in the frontal lobes of the brain acquired in John Fulton's laboratory led to our publication of some 50 papers and 2 books on psychosurgery. They were exciting times; distinguished visitors from all over the world came to us.

We continued to work together until about 1948, when we disagreed about transorbital lobotomy. Since this was common knowledge we wrote in the preface to the second edition of "Psychosurgery":

"The authors regret to announce that they have been unable to reach an agreement on the subject of transorbital lobotomy. Freeman believes he has proved the method to be simple, quick, effective, and safe to entrust to the psychiatrist. Watts believes that any procedure involving cutting of brain tissue is a major operation and should remain in the hands of the neurological surgeon. In all other respects the authors are in complete and cordial agreement and they continue as co-heads of the Department of Neurology and Neurological Surgery of George Washington University."

I had a letter from Walter Freeman recently, and he said, "When you give your talk, I trust you will recall the time when the question of splitting the Department of Neurology and Neurological Surgery came up, putting neurology under medicine and neurological surgery under surgery. You and I went before the Dean and protested that we did not want to 'get divorced' and pointed to a number of essential joint departments that were functioning well in teaching and research."

After World War II more neurosurgeons joined our staff and pooled their efforts, and a formal residency training program was instituted. In 1948, in recognition of the increasing importance of the surgical division, the name of the Department was changed to Neurology and Neurological Surgery. The same year we moved into the new George Washington University Hospital with a 26-bed unit assigned to our combined services.

As chairman of the department I have endeavored to create an atmosphere of learning, an area for teaching, a center for discussions and exchange of ideas, a place for consultations, and a center of communications. We deal with education and organization, and we are keenly aware of public relations and personal relations. We have attempted to teach all medical students sufficient basic neurology to be competent, well-rounded doctors; to arouse the interest of 2 or 3 each year in the teaching and practice of neurology or neurosurgery; and from time to time stimulate 1 to be a scientific investigator.

Among our George Washington graduates who are well known are: Antonio Gonzalez-Revilla, Class of 1936, who is Professor of Neurosurgery and Dean of the School of Medicine in Panama, and Oscar Sugar, Class of 1942, who is Professor of Neurological Surgery, University of Illinois, and Editor of "The Yearbook of Neurosurgery." Irving Cooper, Class of 1945, pioneer in the surgical treatment of Parkinson's disease and cryosurgery, is Clinical Professor of Neurosurgery at New York University and Director of Neurological Surgery at St. Barnabas Hospital, New York City.

We are peculiarly fortunate in Washington in having Government facilities with internationally known individuals in both clinical and research activities. They supplement our teaching staff as special lecturers and consultants and are incorporated into the structure of the department. Some offer elective courses in neurology, and others participate in the instruction and training of our neurosurgical residents. In addition to formal teaching, communications are established between our staff and Walter Reed Hospital, The National Institutes of Health, and St. Elizabeths Hospital. For example, our residents have no hesitation about taking arteriograms to Walter Reed Hospital or to NIH for an informal opinion, and, in fact, usually do so in aneurysm cases.

We now have a full-time medical officer at D. C. General Hospital who supervises the Georgetown and George Washington neurosurgical residencies, a full-time pediatric neurologist at Children's Hospital, and a full-time chief of neurosurgery at the Mt. Alto Veterans Administration Hospital.

During the past 10 years I have devoted a major part of my time to the administration of the Department of Neurology and Neurological Surgery. Harold Stevens is in charge of undergraduate education, and my chief interest is the neurosurgical residency program. In recent years the custom of allowing the senior medical students to select their commencement speaker was established, and Dr. Stevens was chosen by the students for the third time.

I am also indebted to Harvey Ammerman, Robert Groh, George Hayes, Peter Murphy, Hugo Rizzoli, and Jonathan Williams for any measure of success which we have achieved. Harvey Ammerman plays a major role on the service at the University Hospital and directs the Journal Club. Robert Groh has carried on in Walter Freeman's tradition. George Hayes has pioneered in cerebral aneurysms, consulted with us, given us new techniques, and taught our residents microangiography. Peter Murphy's work in cerebral vascular disease has been a source of stimulation. Hugo Rizzoli brought Walter Dandy's technique to Washington, sets a high standard of discipline for our residents, and supervises the service at the Veterans Administration Hospital. Jonathan Williams has maintained the service at Children's Hospital and developed new techniques and instruments for pediatric neurosurgery.

There are other members of the staff, too, but they have not been on the scene as long.

We now have a program in neurological surgery which has Children's, D. C. General and Mt. Alto V.A. Hospitals, and the Armed Forces Institute of Pathology affiliated with our University Hospital. Thus, graduate teaching is carried on in these several facilities.

It takes a decade or two to learn if one's residents are doing merely a good job or an outstanding one. Many of our former residents are chiefs of service, and a majority occupy teaching positions. I have already spoken of Manuel Velasco-Suarez of Mexico. Humberto Mateos, a relative of President Adolfo Lopez-Mateos of Mexico, is Associate Professor of Neurology, University of Mexico, and Chairman of the Department of Neurology and Neurosurgery at Centro Medical. Jesus Lopezlira, also a member of the faculty at the University of Mexico, is Chief of Neurosurgery at the Viente de Noviembre Hospital. All 3 of these neurosurgeons in Mexico City now have residency training programs of their own.

Arcesio Zúniga of Colombia has professorial rank in the Faculty of Medicine in Calí and is Chief of the Neurosurgical Service. On returning to Austria, Wolfgang Koos spent several years on the staff of the Bundesstaatliche Krankenanstalt für Neurochirurgie in Bad Ischl. He recently moved to Vienna where he is *Oberartz* on the University Service of Professor H. Kraus. Emanuele Mannarino is on the staff of the Ospedale Maggiore in Bermago, Italy.

Among our recent residents is Ruth Jakoby, who is the Chief Medical Officer in Neurosurgery at the D. C. General Hospital. John Barrett is the neurosurgeon at Keesler Air Force Base Hospital in Biloxi, Mississippi. In anticipation of a new and larger Veterans Administration Hospital on the Soldiers' Home grounds, a new position in neurosurgery was created with John Fox as Chief of Service. Hamit Gokalp has just completed his residency training program, and on his return to Ankara will be Chief of Neurosurgery at the Turkish Military Medical Academy, a residency training center for all the armed forces of Turkey.

I would present to you only one side of the coin if I failed to mention Hugh Fulcher, whose Georgetown program is a mirror image of that at George Washington. We have a unified service at D. C. General and alternating services at Children's and Mt. Alto and the AFIP. Our residents have profited by association with the Georgetown group, and I believe we have contributed to their development.

By looking back to where we started and recalling some of the landmarks and the people, we can see what the course has been and perhaps see where we are going. Sometimes the sailing has been smooth but more often the winds of fate have made it necessary to tack toward our goal. We get lost occasionally, pause, "shoot the sun," and after making the required corrections move forward again.

In closing I should like to say it has been a privilege to work and teach at George Washington University. I wish to express my appreciation to the late Dean Earl McKinley, who made me a member of the teaching staff and the Executive Faculty, and to Dean Walter A. Bloedorn and Dean John Parks for their interest and support of neurology and neurological surgery. The School of Medicine offers one an opportunity to teach, practice, and do clinical investigation and administrative work. It gives you an opportunity and contacts; then it is up to you.

PRESIDENT'S PAGE

CONTINUITY OF PATIENT CARE

An increasing number of patients in this area are being offered and given "free" physical examinations by many facilities. Many Government agencies do this annually for their executive personnel. Industry has long been an advocate of periodic examinations as have some voluntary health agencies which stress their special interests. Our own Health Department has a mobile "over 40" free screening facility. The Executive Board of the Medical Society approved this unit in 1963 for the purpose of determining the value and yield of diagnostic laboratory procedures. Several studies have indicated that the positive yield of such screening may not be worth the time, trouble, and expense involved. A physical examination by one's own physician coupled with an adequate history and indicated laboraory tests is still the most sound procedure for any patient and his future care.

Advocates of annual executive physicals or periodic screenings by their own agencies claim that many patients who undergo this type of examination would not visit their own physicians for the same services. This can be remedied by proper education. Others state that many "new" findings are brought to light. However, a new finding might be a mild hypertension or cardiac enlargement already known by the patient's own physician.

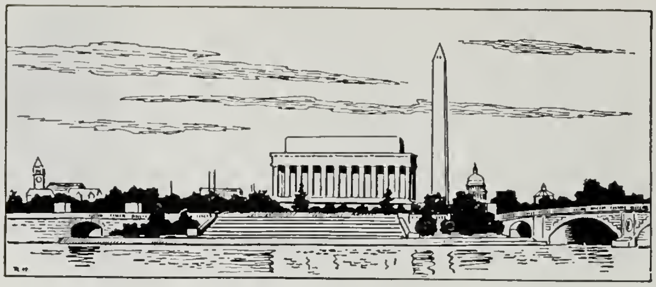
When the examination is conducted by the employer's facility, the employee may for self-protection minimize or conceal symptoms. An executive generally would not reveal symptoms which might jeopardize his possible job advancement.

The real issue, for the patient's benefit, is continuity of care. When a physician is confronted by a patient who has undergone a series of tests outside his office or direction, he is handicapped by a lack of continuity, and the patient's management suffers. Most of us do not object to a patient benefiting from such largesse through tax funds if the actual X-rays, electrocardiograms and other tests are forwarded to the physician. However, often only a report of positive or negative findings is furnished. Patients also may be deluded into a false sense of security from such testings and procedures or panicked by the revelation of a positive finding. The family physician is in a much better position to know which types of examinations are of value to the individual person and their proper timing. All persons should discuss the results of such screening with their own doctors.

Perhaps the growing number of facilities which promote such periodic examinations would do their employees a better service by underwriting such physicals and allowing them to be performed by private doctors at a standard fee. The Medical Council of the Washington Metropolitan Area is at present studying this entire problem.

There are some who might be inclined to "read into" this page a feeling that again organized medicine is opposing free examinations because of our own self-interest. Nothing could be further from the truth! We are primarily concerned with the health care of the individual. Everyone recognizes that continuity of medical care is vital to the proper management of each patient.

Paul R. Wilner



EDITORIALS

Kidney Transplantation

The ability to replace diseased human tissue has been man's dream for centuries. Only recently, however, has it been possible to undertake successful transplantation. In 1954 kidney transplantation between identical twins was found to be possible and the success of this procedure is now well known. The increasing use of the artificial kidney and peritoneal dialysis and particularly the institution of chronic dialysis programs have made kidney transplantation an even more tantalizing goal. Homologous transplantation of kidneys, however, depends on inducing the host tissues to accept the donor kidney. Total body irradiation, as an immunosuppressive procedure, has proven unsatisfactory, although an occasional patient has received some beneficial results. The discovery that certain drugs used in cancer chemotherapy are capable of suppressing immunological reactions opened the era of more successful homologous kidney transplantation.

Two major problems face the physician in this field: (1) the problem of rejection of the transplanted organ, and (2) the source for the transplanted organ. The first of these obviously must be solved before kidney or other organ transplantation can be considered as a feasible rather than an experimental procedure. The second problem, however, is also important. At the present time the use of living donors produces good results. The most satisfactory homologous transplants have been achieved in patients whose donor was their mother. As the relationship of the host to the donor becomes more remote, the chance of survival of the transplanted kidney becomes less. One wonders, however, whether we as physicians are justified in asking a member of a family to donate a kidney for transplantation. There are risks involved in the operative procedure; the donor is left with but one kidney; and at the present time the recipient may, at most, have only temporary benefit. The use of cadaver tissue with proper immunosuppression by means of asathioprine, steroids, and judicious irradiation of the transplanted kidney seems to offer hope that this may become a useful source of tissue. The use of cadaver tissue eliminates problems of the donor but raises many problems for the recipient. Transplantation must be carried out quickly; the donor must not have died of renal disease, must not have had degenerative vascular disease, and must not have had a communicable disease which might be transmitted to the recipient. In addition, since the donors are usually not related to the recipient, rejection occurs earlier.

Recently, the use of tissue from other primates has produced some surprising results. Chimpanzee and baboon kidneys have lived for periods of weeks or months in humans. If such heterografts should be possible, a large source of tissue will be available. However, the use of heterografts further compounds the immunological problems already present and raises many other problems related to the use of tissue from another species of animal. Extensive work must be done before this is readily applicable to man.

Both the medical and the lay public are showing increasing interest in the problem of transplantation. In this, as in any new procedure, the medical public should try to be neither overenthusiastic nor derogatory. As public interest grows, there will be more demands on the part of physicians to provide such services. However, the lay public must also assume some responsibility. Already in Seattle a group of nonmedical people have assisted in determining who should receive chronic dialysis. It may be that in the field of transplanta-

Opinions expressed in contributions to the Editorial Section are those of the writers and do not necessarily reflect the views of the Medical Society of the District of Columbia

tion it will be necessary to have a similar group of lay persons assist the physician in determining who should or should not receive transplantation. Whether this comes to pass or not, the public will certainly have to assume part of the staggering financial burden for carrying out such extensive procedures.

A. E. Parrish, M.D.

Report on Trauma*†

Indication, Performance, and Management of a Tracheotomy in the Patient with an Injured Chest

Tracheotomy is one procedure every practicing physician should be capable of doing. When the necessity arises, it must be done immediately without waiting for the arrival of a specialist.

Patients with chest injuries who are most likely to need tracheotomy are those with:

1. Coma and associated head injuries.
2. Maxillofacial wounds.
3. Flail chest.

Tracheotomy should always be performed whenever excessive secretions or blood cannot be removed from the trachea and bronchi by coughing or intratracheal catheter suction.

Tracheotomy should usually be done when it is first suspected that it is necessary, rather than waiting until it is absolutely essential. Tracheotomies have rarely been done unnecessarily. On the other hand, they have frequently been done too late or not at all. When the procedure is immediately indicated, the circumstance will determine the type needed. If surgical instruments and tracheotomy tubes are available, of course the classical tracheotomy is the procedure of choice (figure 1). The incision is made over the lower third of the cervical trachea. A sandbag is placed beneath the shoulders. With the index finger and thumb on either side of the trachea, the incision is carried through the skin and the platysma. Then the strap muscles over the trachea are separated. The trachea is exposed, and at least 2 tracheal rings are incised longitudinally. Either side of the incised trachea is grasped with an Allis clamp, and a small window is made in the trachea for placement of the tube.

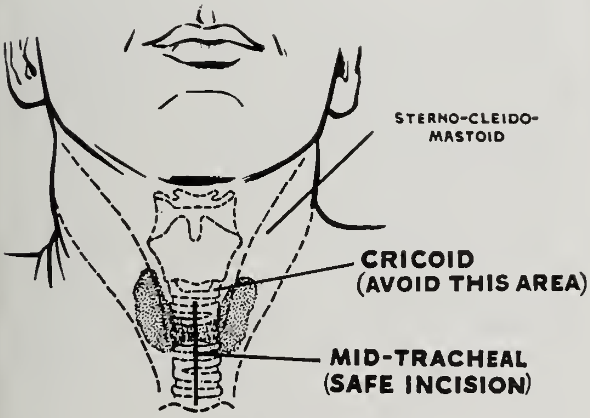


FIG. 1. Site for tracheotomy incision just below the cricoid cartilage to the suprasternal notch (sandbag under the shoulders).

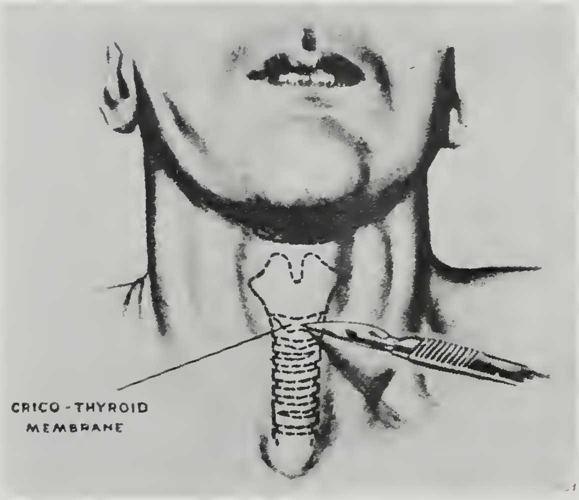


FIG. 2. Emergency tracheal stab used only when tracheotomy tubes are not available.

When only a knife, be it just a pocket knife, is available, the cricoid membrane stab (figure 2) is justified, but it should be used only when the classical tracheotomy cannot be done. Extending the neck, one can feel the large thyroid cartilage, and just beneath it, with the index finger, a V can be felt in the cricothyroid membrane. With the transverse incision through this superficial and soft area, one can rapidly enter the trachea. Then with the handle of a penknife, the incision can be held open until something more adaptable is available.

---

* This is the fourth of a series of papers concerning Trauma submitted by the North Carolina Chapter of the American College of Surgeons Committee on Trauma. The first appeared in the May, the second and third in the November and December, 1964 issues of the Medical Annals.

† Reprinted by permission from N Carolina Med. J., vol. 24, no. 5, May 1963. Request for permission was made at the suggestion of Dr. Milton C. Cobey, Chairman, Committee on Trauma, Section III, American College of Surgeons.

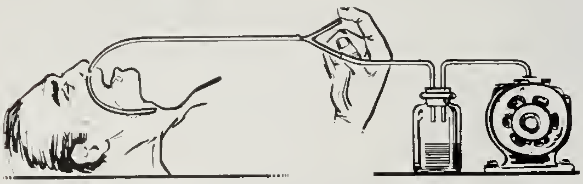


FIG 3. Insertion of Y-tube between suction machine and catheter to obviate anoxia.

The care of the tracheotomy tube is simple. A clean airway is maintained by insertion of a small catheter just far enough to stimulate cough. Gentle suction aids in removal of secretions.

The hazard of prolonged suction is real and often results in anoxia and even cardiac arrest. A Y-tube inserted between the suction machine and the catheter will obviate this complication (figure 3). The finger is applied to the end of the Y-tube, and aspiration is maintained only as long as the physician can hold his own breath.

At the appropriate time for removal of the tracheotomy tube, no dressing is applied. The edges of the skin are approximated with adhesive tape, and healing is completed within a few days.

Defense Against Importation of Smallpox*

THE TWELFTH REPORT of the World Health Organization's Committee on International Quarantine included recommendations as follows, which were adopted by the 17th World Health Assembly, held in Geneva, Swit., March 19, 1964:

> "The Committee is extremely concerned with the record of importation of smallpox in international traffic and the secondary cases resulting from these importations. The Committee, therefore, recommends that countries where smallpox vaccines are manufactured should ensure the potency of the vaccines so manufactured to enhance adequate immunity to smallpox. It recalls that international vaccination certificates are issued under the authority of a government, and consequently governments have the responsibility to ensure that potent vaccines and proper procedures are used, so that smallpox vaccination will result in an adequate immunity to smallpox. It again stresses the need for medical and other personnel who come in contact with travelers to maintain a high level of immunity against smallpox by repeated vaccination.
>
> "The Committee further recommends that the following information should be furnished to physicians: 'The vaccine should be used before the advertised expiry date; it should have been stored and handled according to the manufacturer's instructions.' "

The United States Public Health Service points out the following similar recommendations, made in 1955 by a Technical Advisory Committee to its Division of Foreign Quarantine, and still timely:

> ". . . (1) That all physicians, nurses, attendants and others whose occupation brings them into possible contact with a smallpox case, maintain adequate immunity against smallpox by repeated smallpox vaccination at least every 3 years; (2) that employees in airports and seaports whose occupation brings them into frequent contact with travelers from abroad be required to maintain valid vaccination certificates; (3) that all medical and public health schools be urged to emphasize in their teaching the principles of the differential diagnosis of smallpox, the proper technique of vaccination, and the methods of preserving vaccine to ensure effective prophylaxis."

Our national defenses at port quarantine stations are important. So are the long-range global efforts toward smallpox eradication, sponsored by WHO. But meanwhile the individual physician retains the fundamental responsibility of ensuring that each vaccination or revaccination given by him, or under his supervision, is administered with vaccine and technique that will result in actual immunization. With the increasing practicability and speed of world travel, one lapse could lead not only to illness in a patient but to importation of smallpox into the United States from one of the areas where it still has a firm hold.

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---

* Text of a news release from Louis Jacobs, M.D., Chief of the Division of Foreign Quarantine, Public Health Service, U. S. Department of Health, Education, and Welfare, issued January 15, 1965.

Prenatal Serologic Tests Required

The Board of Commissioners has approved an amendment to the health regulation on prenatal serologic tests. The new regulation requires a physician in charge of a pregnancy to include in the management of his case a serologic test for syphilis at the first visit when a diagnosis of pregnancy is made, unless a test has been made within 30 days of such visit. The previous regulation required that a serologic test for syphilis be made in the period prior to delivery. The new regulation simply requires 2 serologic tests to be performed, one early in pregnancy and one later.

The principal advantage of this new regulation is that it will detect syphilis in the mother early in her pregnancy, at which time she can be treated and be reasonably assured of a healthy baby. If this could become an invariable practice, congenital syphilis would become almost nonexistent. The later serologic test will make certain that any patient who may have been infected during pregnancy will be detected and appropriate therapeutic measures can be started.

If the performance of this test would be medically harmful to the patient, the physician may omit it but he is required to state on the medical record his reason for such omission.

Both Medical Societies in the District of Columbia approved this change in the prenatal regulation before it was submitted to the Commissioners.

Murray Grant, M.D., D.P.H.
D.C. Director of Public Health

New Surgeon General of Navy

Rear Admiral Robert B. Brown, MC, USN, has been appointed by President Johnson to the office of Surgeon General of the Navy and Chief of the Bureau of Medicine and Surgery, to serve for a 4-year period from February 15, 1965. He succeeds Rear Admiral Edward C. Kenney, who was retired from the Navy on March 1.

Admiral Brown, a native of Pennsylvania, received his medical degree from the University of Pennsylvania School of Medicine in 1933. He interned at the University Hospital and then became a member of the faculty of the School of Medicine, first as Instructor, and from 1946 to 1951 as Associate in Surgery. He received the degree, Doctor of Science (in surgery), from the Graduate School in 1941.

He reported for active duty in the Navy in 1942. Among his early assignments were Chief of Surgery at the Naval Hospital, Annapolis, Md.; Assistant to the Chief of Surgery, Naval Hospital, Philadelphia; and Chief of Surgery, Naval Hospital, Bethesda, Md. As Rear Admiral he became the Commanding Officer of the National Naval Medical Center in February 1962. On August 1, 1963 he became Assistant Chief of the Bureau of Medicine and Surgery for Personnel and Professional Operations, Navy Department, and in June, 1964, was designated Deputy and Assistant Chief of that Bureau.

Admiral Brown has received many decorations and citations. He is a diplomate of the American Board of Surgery and belongs to many national scientific organizations, including the American Medical Association and the American College of Surgeons.

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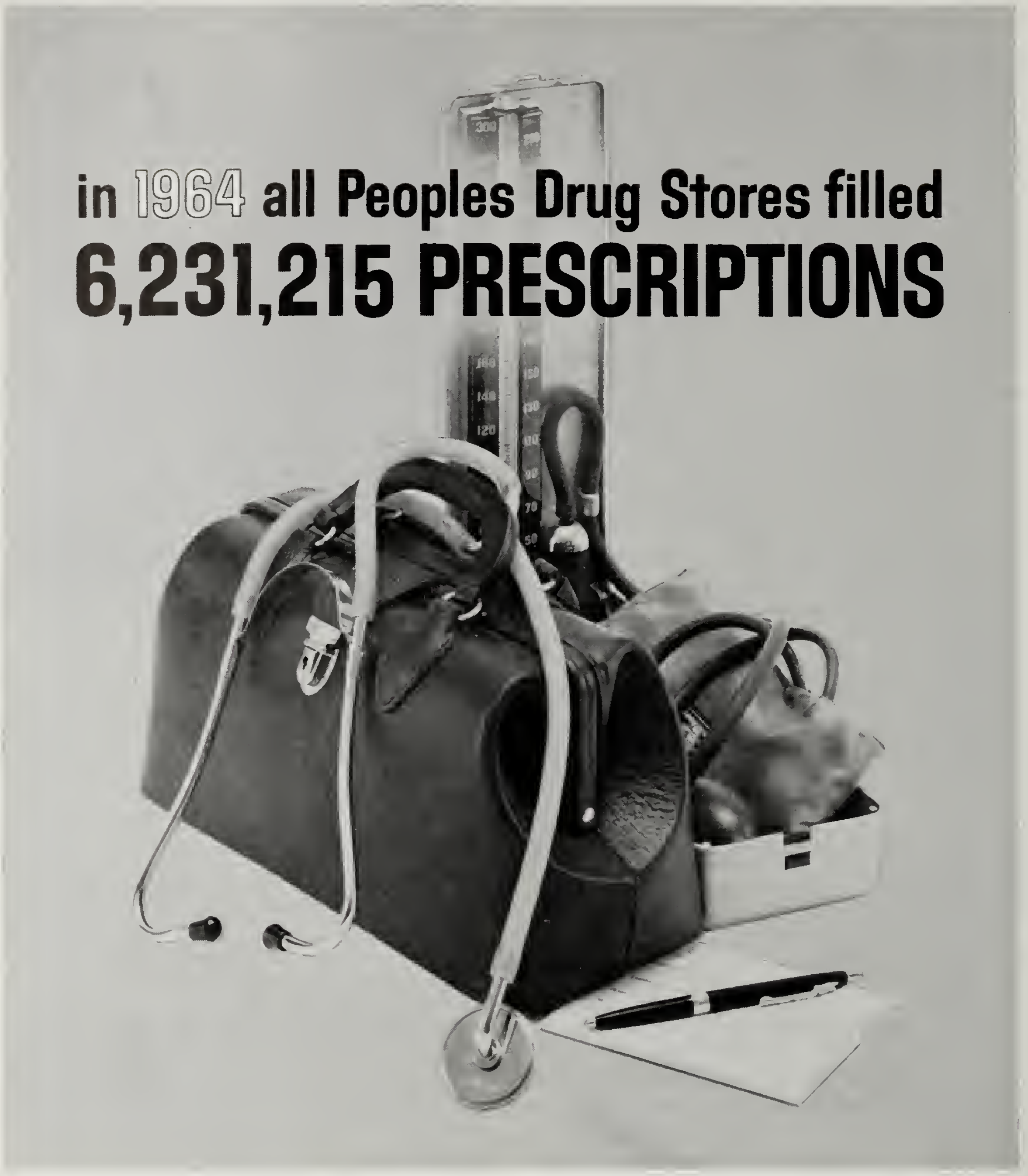
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Transfusion—Confusion

J. JOSEPH BARSE

Partner in the law firm of Welch, Daily & Welch, Washington

On September 17, 1963, Mrs. Jessie E. Jones, a patient in the Georgetown University Hospital, having repeatedly refused the blood transfusions urged upon her by the house staff, was nevertheless given transfusions. This was accomplished by an order issued by Judge J. Skelly Wright of the U. S. Court of Appeals for the District of Columbia pursuant to an application therefor filed by the Hospital.

Prior articles in the Annals ("Freedom, Conscience, and Authority" and "The Doctor's New Dilemma") have explored the implications of Judge Wright's order from the standpoints of the clergyman and the doctor, and this one will attempt to do so from a lawyer's, or at least one lawyer's viewpoint.

It would be a considerable understatement to say that the case had generated only a little discussion: Only recently it was the subject of a 2-day symposium at a major law school; it has been reported in national news magazines; it forms the basis for many arguments, friendly and otherwise, between and among doctors and lawyers.

And just as it has generated discussion, it has also engendered confusion. Doctors and hospitals are seeking advice rather frequently from their attorneys, and are likewise petitioning their Medical Associations, trying to learn whether "accepted standards of medical practice" now require them to treat their patient by court order.

Unfortunately, no quick and easy answer to this problem will be offered here, for although the law has not been changed, the argument can certainly be made that it possibly is changing.

In any society, without order there is chaos; and order comes only from rules which must be followed by everyone. "Law," basically, means only the fair formulation and enforcement of the rules. Human experience has shown, however, that even the simplest rule will be interpreted differently by different people, so human wisdom ordained the establishment of an agency to make the interpretation. Hence, our courts.

Their primary purpose is only to interpret the law, not to make or change it. Every judge is obligated to apply the law as it has theretofore been duly interpreted by higher courts, whether he agrees with it or not; and this duty to follow precedent is one of the bedrocks of our judicial system, giving it, and those subject to it, constancy, assurance, and order. For without precedent—if every judge were free to interpret according to his own whim—we would be back where we started, with many varied meanings given to the same law, and no one able to say which was correct.

It is this reliance on precedent, however, that enlarges the present problem. Judge Wright's order is not a precedent which must be followed by the courts in the District of Columbia or any other jurisdiction because it is not a decision of the Court of Appeals. But it may be persuasive to other courts and followed by them. The United States Court of Appeals for the District of Columbia Circuit is considered by many to be the second most important court in the country. Its decisions, whether interpretations or innovations, are widely followed in other jurisdictions as being authoritative, as establishing solid precedent. A ruling of a member of that Court will therefore carry substantial weight with other judges confronted with similar cases, and will undoubtedly be cited by them to support orders to patients to submit to similar, and even more drastic treatment.

Since the Georgetown Hospital case, the following decisions have been made:

A judge in Nassau County, New York, ordered a "surgical operation" upon an adult patient in a hospital who was in a "comatose state," and whose wife would not give her consent. The nature of the operation was not described in the opinion although it was stated to be necessary to save the patient's life.

The Circuit Court for Dade County, Florida, ordered the amputation of the gangrenous leg of a 78-year-old patient even though she told the court she would rather die than lose her leg.

The Probate Court, Cook County, Illinois, at the request of the attending physician, ordered blood transfusions for a 39-year-old female patient suffering from a peptic ulcer. The doctor testified that she would die within 24 hours if she were not given blood. Both the patient and her husband had refused, on religious grounds, to consent to transfusions. (This case has been appealed to the Court of Appeals of Illinois and will undoubtedly have been decided by the time this article is printed. It should constitute the first appellate decision on the precise issue.)*

The Supreme Court of New Jersey, in a case somewhat similar, though actually substantially different, ordered transfusions for an adult patient in a hospital who had notified the hospital that she did not wish transfusions because they were contrary to her religious beliefs. She was then beyond the thirty-second week of pregnancy and the child was quick and viable. The evidence established "a probability that at some point in the pregnancy" the patient would "hemorrhage severely and that both she and the unborn child" would die unless a blood transfusion was administered. The Court ordered transfusions on the grounds that the unborn child was an infant having a separate legal standing and was entitled to the law's protection. The decision specifically avoided answering the question of whether an adult, to save his life alone, may be compelled to submit to such medical procedures. (Interesting to note is the fact that the patient later delivered, was given only 1 pint of blood, and both mother and child are presently fine.)

Examination of these and similar cases almost always reveals that one or more conditions exist by reason of which courts can intervene to protect us against ourselves: infancy or incompetency. Judge Wright's order may be similarly classified, for in it he says: She was "not in a mental condition to make a decision," and she was "hardly *compos mentis* at the time."

Such findings, however, are thought by many to be made more for the purpose of legal justification than for any other reason. If Mrs. Jones, weak from loss of blood and possibly somewhat "out of touch," thereby became incompetent and subject to court-ordered treatment, then any patient under general anesthesia could be similarly considered. Other examples could be cited ad infinitum.

Courts have well established and strict procedures for declaring a person legally incompetent—procedures made deliberately intricate and involved so that a person may not be so declared without thorough investigation and full opportunity to be heard. Other rules of procedure pertaining to the manner in which suits are instituted, heard, and appealed are rather complex, but definite, and have as their principal purpose the protection of the parties. Some of the strongest criticism of Judge Wright's order, coming from other judges in the Court of Appeals, was for the by-passing of these rules and procedures, or, as Mrs. Jones expressed it through her attorneys, for his "instant justice."

If infancy and incompetency are to be considered as the criteria for court-ordered treatment, the problem is easily resolved—in general terms. It is only when individual cases are considered that solution becomes difficult. Assume that the unborn infant in New Jersey could only be saved by a surgical procedure which would pose a serious threat to the mother's life or well being. Would the New Jersey Court have ordered surgery as readily as it did transfusions? Strong and logical legal arguments could be made for both sides. Assume that an adult, apparently competent patient refuses, for religious, personal, or other reasons, all medical advice that he submit to recommended procedures. Does he by his refusal establish his incompetency? Many psychiatrists hold that a person violating the law is, by that fact alone, proven to be of unsound mind, or, at least, to be suffering from a mental illness. And this theory enjoys surprising support in the legal profession. A finding of incompetency, based solely upon a refusal to accept medical advice, is certainly only one step further, and the step will almost surely be taken. Hopefully, though, only in isolated instances.

If a finding of incompetency is only a legal justification for a well intentioned but nevertheless drastic court order, what is the real motivation behind it?

A sincere and honest desire for saving a life, yes. But many find something more:

Judge Wright's order states that judicial refusal to accept and determine the issue "would create a legal vacuum to be filled only by the notions, and remedies, of the private parties themselves." He says further that "the State, as *parens patriae*, will not allow a parent to abandon a child, and so it should not allow this most ultimate of abandonments. [Mrs. Jones had a 7-month-old child.] The patient had a responsibility to the community to care for her infant. Thus the people had an interest in preserving the life of the mother."

---

* On March 18, 1965, the Supreme Court of Illinois reversed the Orders of the Probate Court, saying, *inter alia*, "In the final analysis, what has happened here involved a judicial attempt to decide what course of action is best for a particular individual, notwithstanding that individual's contrary views based upon religious convictions. Such action cannot be constitutionally countenanced."

It is thought that these and similar paternalistic views form the basic rationale. They are in keeping with an obvious and deep-rooted current social trend which, more and more, tends to subvert what were once considered as inviolate individual rights to something designated as the good of the "people," or "community," or "State." The changes have been sudden and drastic on some occasions, subtle on others.

Mr. Justice Douglas, in an address to the American Law Institute, once said: "History shows that governments bent on a crusade, or officials filled with ambitions have usually been inclined to take short cuts. The cause being a noble one (for it always is), the people being filled with alarm (for they usually are), the government being motivated by worthy aims (as it always professes), the demand for quick and easy justice mounts. These short cuts are not as flagrant perhaps as a lynching. But the ends they produce are cumulative; and if they continue unabated, they can silently rewrite even the fundamental law of the nation."

More recently, Mr. Justice Brennan, speaking at Georgetown Law School at the Edward Douglass White Lecture Series, expressed a somewhat different thought: "The law is again coming alive as a living process responsive to changing human needs. The shift is to justice and away from fine-spun technicalities and abstract rules."

"Justice" is the key word; "technicalities" and "rules," the doors to be opened. If these safeguarding practices are gradually to be eroded away, "justice" may come to mean only what an individual judge might decide. With the emergence and prevalence, and perhaps predominance, of the so-called "liberal" school of thought, this could easily be what a single person in authority might determine "to be best for you, because it is for the good of the community."

Whether we agree with this "new" approach or not, its existence and momentum must be recognized, as must be the fact that if the trend does continue unabated the "fundamental law of the Nation" will be rewritten.

As directly applied to the medical profession what, therefore, is the effect of the Georgetown Hospital case?

In the opinion of the author, the law has not changed. There has not been added to the obligation to comply with accepted standards of medical practice the further burden of seeking court orders. A physician must still honor his patient's desires, and if he renders treatment against her will he may still be liable for legal assault.

Only the opportunity to give refused treatment has been added. The door has been cracked, and it might, in the future, be opened wide.

Health Dept. Notes

The Juvenile Amputee Clinic

There is located at D. C. General Hospital a regional clinic for amputee children. It offers orthopedic services, prosthetic devices, and continuing outpatient care to infants and children who have deformed and missing limbs and similar birth defects and handicaps.

This Juvenile Amputee Clinic has been in operation since 1958. It is funded by the Federal Government through the Children's Bureau and operated by the D. C. Department of Public Health. The entire range of services (diagnosis, treatment, prosthesis) is available without charge to persons in the District of Columbia, Maryland, Virginia and elsewhere. There is no requirement of indigency or a means test.

All patients are taken by referral from hospitals, physicians and other clinics. Most of these youngsters will have some form of congenital amputation, although traumatic cases are also seen. Most will be under the age of 6; many will be infants.

This latter is significant because it means that surgical correction, if needed, and the fitting of prostheses can be done at an early enough age to provide the child with prospects for a later, almost normal life.

Early diagnosis and referral is as important in an amputee program as in other areas of medicine.

Return visits, as the child outgrows the original prosthesis and is refitted with the new, mean that there is good follow-through in a medical sense for the patient and in a social-adjustment sense for the parents.

The Clinic uses the team approach for each patient. Available skills and services include ortho-

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pedic surgery, pediatric care, physical and occupational therapy, medicosocial aid, and psychological testing. The Clinic also has its own staff prosthetist whose workshop is part of the Clinic. This permits participation in case consultations, availability during clinic sessions, and an opportunity to modify a prosthesis even as it is being fitted to the patient.

Each new referred patient follows a standard procedure, which begins with the initial history and an orthopedic and pediatric examination. The physicians are especially aware that other musculoskeletal anomalies may exist, in addition to that which brought the patient in. X-ray and laboratory tests will be made, as well as speech, hearing, motor development, psychological and other special evaluations.

Physical and occupational therapy may be needed prior to test-fitting a prosthesis. Occasionally a malformed limb may require surgical adaptation to provide a more standard type of fitting. Then the actual prosthetic prescription is written by the clinic team and the device itself constructed by the prosthetist in his shop. After thorough examination the device is fitted to the child, and a long training period now begins.

This is a most important phase of the amputee program. The training is usually given on an inpatient basis but can be offered as outpatient if practicable. Upper extremity amputees are trained by an occupational therapist; lower extremity, by a physical therapist.

The young (under age 4) patient with upper extremity prosthesis may stay 4 to 6 weeks in the hospital, with 2 training sessions a day. Very young patients who have never walked and have lower extremity prosthesis and patients with multiple involvement have special problems and their hospital stay may be longer.

Having learned to use their arm or leg prosthesis, the children are checked at the Clinic at least every 3 or 4 months as outpatients. Continued training and retraining will be given the child for many years, and a new prosthesis made as the old one is outgrown.

Almost 200 children have benefited from this Amputee Clinic since its beginning 7 years ago. There are presently about 90 youngsters being treated on an outpatient basis and about 2 new patients are added each month.

As these children pass into young adulthood, their medical and social needs are forwarded from the Amputee Clinic to the Office of Vocational Rehabilitation and other similar agencies. It is possible, however, that a patient could be followed in the Clinic from infancy to age 21.

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Murray Grant, M.D., D.P.H.
D. C. Director of Public Health

Medicolegal Abstracts

In California a court upheld the suspension of a doctor's license for attempted income tax evasion. The court felt that there was sufficient evidence to indicate that the doctor had intentionally filed a false income tax return for personal gain. This act involves moral turpitude, and for this reason the Board of Medical Examiners was justified in ordering the suspension.

* * *

In California, a doctor and a hospital were able to overcome the application of the doctrine of *res ipsa loquitur*. The case involved a patient who suffered a ruptured disc after removal of the cervix and tissue build-up. She complained of symptoms suggesting the disc when she regained consciousness after the operation. It was at this point in the testimony that the jury was instructed in the doctrine.

It then became the burden of the doctor and hospital to prove either that there was another accident causing the condition or that the treatment was such that the accident could not have resulted from lack of care. They successfully proved the latter.

Comment: This doctrine seems to cancel the presumption of innocence. The defendant then becomes obliged to prove his innocence rather than the plaintiff proving guilt.

* * *

In Louisiana a hospital visitor was asleep in a chair beside the bed of her sick husband. A nurse's aide moved the over-bed table around from the other side of the bed and placed it in front of the sleeping wife, almost touching her. Her husband was lying on his side, looking the other way, and did not see where it was put. When his wife awoke, she struggled to get up, fell over the table, suffered a subdural hematoma, and subsequently died.

An appeals court supported the award, totaling $35,000, indicating that it did not feel this to be excessive. It pointed out that the woman could not be expected to be normally alert upon first awakening and that the aide was negligent in placing the table where she did.

Comment: Hospitals cannot be too careful in instructing all their personnel in safety. They are expected not only to avoid accidents but to foresee them and prevent them.

* * *

A medical society is not a charitable organization, according to a ruling in Missouri. The case concerned a bequest in trust to a medical society. The court held that it did not qualify as a charitable deduction in computing the estate taxes.

The court noted that the bequest could have been deductible under a statute which excludes gifts to be used exclusively for religious, charitable, scientific, literary, or educational purposes if it had been absolutely limited to library use.

* * *

In Cleveland a U. S. Court of Appeals ruled that a hospital must pay Social Security taxes on the allowances it paid to residents-in-training. It ruled that the exception adopted in 1939, exempting from the definition of "employment" the services of interns, does not apply to residents-in-training. Although the terms intern and resident are interchangeable in the minds of many laymen, the expertise acquired by Congressional committees through the drafting of legislation certainly included knowledge of the difference between the two.

Comment: This decision reverses the trial court ruling in this case.

Robert R. Montgomery, M.D.

A Lot of Headaches

The Bayer Company, which supplied the aspirin for the 1964 New York World's Fair, reports that through vending machines and first-aid stations just over half a million tablets, including 10,000 orange-flavored tablets for children, were dispensed to the 33 million visitors.

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References: 1. Handelman, Cathryn C.: Early management of acne, *Pediat. Clin. North America* 8:265, Feb., 1961. **2.** McLean, I. E. D.; Graham, K. T., and East, M. O.: The treatment of acne; a trial of "pHisoHex," *Practitioner* 189: 82, July, 1962. **3.** Hodges, F. T.: Therapeutic applications of an antiseptic detergent, *GP* 14:86, Nov., 1956. **4.** Wexler, Louis: Treatment of acne vulgaris, *Clin. Med.* 70:404, Feb., 1963.

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NEWS & PERSONALS

Summary of Executive Board Actions

The Executive Board of the Medical Society of the District of Columbia held a dinner meeting in the Society's building, March 22, 1965. Present were Dr. Duane C. Richtmeyer, Chairman, Drs. C. Willard Camalier, Jr., Robert J. Coffey, Karl C. Corley, Darrell C. Crain, J. Spencer Dryden, Raymond T. Holden, Edward W. Nicklas, Paul R. Wilner, and Mr. George W. Cooley, Secretary. Also present by invitation was Mr. Lou Brott, Public Relations Representative. The Chairman called the meeting to order at 7:00 p.m.

Committee Meetings: The Secretary reported that the following meetings had been held since the last meeting of the Board:

February 16 Committee on Alcoholism
16 Liaison Committee with Allied Professions
17 Subcommittee on Medicolegal Problems
18 Liaison Committee with Public Health Department
23 Committee on Postgraduate Education (Program Committee, Scientific Assembly)
23 Committee on Hospital Utilization
24 Committee on Child Welfare
25 Liaison Committee with Public Health Department
25 Liaison Committee with the Clergy
26 Committee on Rehabilitation and Chronic Illness
March 3 Subcommittee on Medicolegal Problems and Bar Association representatives
5 Fee Review Committee
8 Committee on Mental Health
9 Committee on Postgraduate Education (Program Committee, Scientific Assembly)
10 Committee on Aging and Public Welfare
11 Subcommittee on Life Insurance
11 Liaison Committee with Public Health Department
15 Subcommittee on Accident and Health Insurance
16 Committee on Alcoholism
16 Grievance Committee
16 Liaison Committee with Allied Professions
17 Board of Credentials
17 Relative Value Study Committee
18 Medical Bureau Committee
19 Committee on Physician Placement
19 Subcommittee on Liaison with Medical Schools and Hospitals

Board of Credentials: The Executive Board approved for membership the following applicants recommended by the Board of Credentials:

Active Members

Alberto Diaz Atiles, 11 Mississippi Avenue, S.E.
Walter Robert Helmig, Sibley Hospital
Arthur Peschin, George Washington University Hospital
Aurora Oteyza Rivera, Northwest Central Clinic
James Sanford Young, 4400 Stamp Road, S.E.

Associate Members

R. Mario Abellera, Armed Forces Institute of Pathology
Poo Liang Chang, 2650 Wisconsin Avenue, N.W.
William Bingham Gunther, 4917 Edgewood Road, College Park, Md.
Francis Peter Milone, 4400 Stamp Road, S.E.
Lucienne Numa, St. Elizabeths Hospital

The name of newly appointed Surgeon General of the Navy, Rear Admiral Robert B. Brown, MC, USN, was submitted for Honorary membership and the nomination received unanimous approval.

Finance Committee: Dr. Richtmeyer presented the Annual Auditor's Report submitted by James J. Sanders, C.P.A. The report was approved.

The Chairman of the Council on Specialty

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Sections was authorized to offer the same staff and office assistance to other Sections of the Society as has been given the Section on Pediatrics.

House and Building Fund Committee: Dr. Corley presented a report from this Committee. The Board agreed that it would consider the solicitation of donations to the Building Fund as contributions or memorials and requested a report from the Committee on possible plans for such solicitation.

Section on Radiology: Dr. Corley reviewed a survey project, approved by the Section on Radiology, which is designed to assess selected medical X-ray installations and facilities using radium in the District of Columbia, in terms of national standards of radiation protection, to eliminate serious radiation hazards resulting from improper use of X-rays, defective equipment or material, and inadequate protective facilities. The Board approved this project, which will be carried out in coöperation with the D. C. Department of Public Health.

Eldercare versus Medicare: Dr. Crain introduced Mr. Brott, who has been retained by the Society in a public relations capacity for promoting the AMA Eldercare and the Kerr-Mills programs. Mr. Brott reviewed briefly the plans for an educational kit to be sent to physicians and other groups and furnished a list of radio and TV stations which had made tentative commitments to coöperate in this program. Dr. Crain pointed out that the Board had agreed to match such AMA funds as could be profitably expended. The Board voted to assign this project to a committee composed of Drs. Crain, Nicklas, Camalier, and Warren D. Brill.

Press, Radio and TV Dinner: The Secretary reported that this annual dinner for representatives of the press, radio and television had been scheduled for April 20 at the Madison Hotel, and that representatives from the surrounding County Medical Societies had been invited to attend.

Medical Emergency Disaster Service: A report from Dr. William R. Strong to the Committee on Emergency Medical Service had been submitted to the Board. This report showed that there are now approximately 15 physicians active in the MEDS organization. Dr. Strong suggested that another emergency medical care course be given, that the size of MEDS be increased, that special bus disaster units be built, and that a grant be requested from a national foundation for a communications control center. The report also recommended to the Board that a joint preliminary meeting be arranged between the various organizations serving the community in times of disaster and medical emergencies to initiate a study and to institute a coördinated and combined program for the handling of disasters and medical emergencies in the District of Columbia. The Board voted to approve the broad outline presented by Dr. Strong and to refer it back to the Committee for specific details on how the various suggestions might be carried out.

Committee on Rehabilitation and Chronic Illness: The Board favored 2 recommendations of this Committee, namely, closer liaison with the Rehabilitation Council of the Health and Welfare Council of the National Capital Area, for the purpose of promoting coördinated activities, and the establishment of a committee, to be composed of members of the Rehabilitation Council and the Medical Society, which would function as a joint planning group.

Subcommittees on Insurance: The Secretary reported that the Subcommittee to consider a Group Life Insurance Program to replace the franchise program had agreed upon its recommendations and would make them to the Insurance Committee. The Secretary also reported that the Subcommittee on Group Accident and Health Insurance had received a complete progress report from a representative of Mutual of Omaha.

Medical Bureau Committee: The Secretary informed the Board that this Committee had met and discussed some changes in BUREAU operation looking toward improvement in BUREAU services.

Policy Decisions Regarding Committees: (A) If, in the opinion of a committee chairman, any member of the Society could contribute to the deliberations of the committee, he should be invited to attend the meeting under consideration and present his views; he may or may not remain throughout the entire meeting, at the discretion of the chairman. In general, all guests except officers of the Society might best be excused during the time a committee deliberates on a problem for the purpose of making a decision. Any member of the Society may request to appear before a committee. (B) All decisions arrived at by committees should come to the Executive Board if they involve policy or are without precedent as to policy; where guidelines or policy precedence has been established, it will not be necessary to ask for further Board approval. (C) Material emanating from other than nonprofit organizations shall be excluded from Society's mailings, including the *Newsletter*, unless exception to the ruling is made by the Executive Board.

Committee on Child Welfare: The Kidney Disease Program, to be sponsored by the Public Health Service and Georgetown University under the Federal Community Health Services Act, was approved.

Recommendations of this Committee for amending H.R. 3411, a bill to provide for the mandatory reporting by physicians and institutions in the District of Columbia of certain physical abuse of children, was approved and the Committee was authorized to testify on its amendments before such committees of Congress as may consider this matter.

Other Business: The recommendations of the Relative Value Study Committee concerning a revised fee schedule for the Society were approved.

Dr. William P. Herbst, Jr. was notified that the Board members would appreciate his representing them at the hearings on the Health Department budget, and it was suggested that he supply the Board with an analysis of the proposed budget and any pertinent information relating thereto.

The Secretary read a letter from Dr. Murray Grant to Mr. Frank Ridge of the Life Underwriters Association regarding Medic-Alert. The letter specified certain conditions for joint sponsorship of this project by the Health Department, the Life Underwriters, and the Society. The Board approved the principles of the Medic-Alert Foundation in 1961.

The Board also voted that in the future the names of members censured by the Executive Board be included in the *Newsletter* to members along with other changes in membership status.

There being no further business, the meeting was adjourned.

Meetings

The Annual Cardiac Symposium, sponsored by the Montgomery County Tuberculosis and Heart Association, will be held Thursday, May 27, at the Clinical Center Auditorium of the National Institutes of Health in Bethesda. This will be an all-day meeting beginning at 8:45 a.m. and closing at 4:45 p.m.

Dr. Kenneth Cruze, Director of Medical Education at the Washington Sanitarium and Hospital, is Chairman of the Symposium, which will be of particular interest and assistance to general practitioners and internists. Topics to be discussed will include medical management of cerebral vascular accidents, differential diagnosis of hypertension and angina, cardioversion, and lipid and cholesterol metabolism. Programs have been mailed to physicians. There will be no registration fee.

There will also be an evening Clinical Staff Conference on "Congestive Heart Failure," conducted by the National Heart Institute, 8:30 p.m. The moderator will be Dr. Eugene Braunwald. This program will also be held in the Clinical Center Auditorium.

The 1965 Scientific Session of the American Cancer Society will be held at the Drake Hotel in Philadelphia, June 16. The topic for the session will be "Hormones and Chemotherapy for Cancer —A Critical Appraisal." The symposium is open to all members of the medical and dental professions and to students. There is no advance registration or registration fee.

Speakers from all parts of the United States will be present to participate at this meeting. Among the medical centers to be represented will be New York City, Philadelphia, Baltimore, Detroit, Minneapolis, Chicago, Boston, Los Angeles, Houston, Nashville, Tenn., and Pasadena, Calif. Speakers will also be present from the National Cancer Institute and the Veterans Administration.

Presiding at this meeting will be Dr. Murray M. Copeland, of Houston, Texas, who is President of the National Society this year. Dr. Copeland is an Associate member of the D. C. Medical Society and a former President of the D. C. Division of the American Cancer Society.

GERIATRIC SYNDROME

when a change in environment overwhelms him with anxiety

Failing health, financial difficulties, or the death of a spouse are among the reasons why elderly people may be obliged to leave their familiar surroundings. Moving in with children or entering a home for the aged may satisfy practical requirements but can be psychologically traumatic since emotional resilience tends to diminish with age.

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jection have been followed, reports of soft
sue reactions have been rare. I.V. adminis-
ation should be slow, no faster than 25 mg.
r minute, and should not exceed 100 mg. in
y single dose. Particular care should be used
insure injection only into intact veins; a few
stances of digital gangrene occurring distal
the injection site have been attributed to
advertent intraarterial injection or periarte-
l extravasation, both of which should be
oided. More detailed professional informa-
n available on request.

The American Medical Association is holding its **114th Annual Convention** in New York City, June 20–24. The largest attendance in AMA history is expected, which may reach 70,000, including some 25,000 physicians. The scientific exhibits will be displayed in the New York Coliseum, where many of the scientific sessions will convene along with an extensive medical motion picture and television program. It is expected that an unusually large attendance will be drawn from the District of Columbia and surrounding area. Representing the Society at the meetings of the House of Delegates in the Americana Hotel will be Dr. Raymond T. Holden, Dr. C. Willard Camalier, Jr., and Mr. George W. Cooley, Secretary.

In conjunction with the AMA Convention, the **Seventh Annual AMA-ASHA Preconvention Session on School Health** will be held on the evening of June 20. All physicians interested in school health programs are invited to attend as well as persons in related professional fields.

General News

The Georgetown University, Division of Ophthalmology announces its second 2-year **Course for Ophthalmic Assistants** starting July 1, 1965. The course, which will consist of 4 semesters with 2 weeks' annual vacation, is open to both men and women, ages 21 to 50 years. The applicants must have 2 years of college, or certification as a registered nurse or practical nurse, or 2 years of office experience with sponsorship by a certified ophthalmologist. There is no tuition. An annual stipend of $2,400 will be paid to each trainee. Qualified applicants should send their curriculum vitae to Dr. P. Y. Evans, Program Director, Georgetown University Medical Center, Division of Ophthalmology, Washington, D. C. 20007.

The National Association of Residents and Interns is introducing a new, nationwide **Practice Loan Plan.** This plan makes available funds up to $5,000 for the young resident or intern who is about to enter the private practice of medicine. These funds may be used for living and operating expenses, furnishings, equipment and medical supplies, automobiles, home improvements, and almost everything else that is necessary to begin practice. Inquiries concerning the plan may be directed to Mr. George Arden, National Association of Residents and Interns, 41 East 42nd Street, New York, N. Y. 10017.

The American Heart Association is offering **Fellowships in Medical Education** for fiscal 1965–66 as part of its program to stimulate full-time careers in the field of medical education. In addition to the study of modern teaching methods in preclinical and clinical fields, the Fellowship includes training in the analysis of medical learning processes and behavioral psychology.

Fellows in medical education will be trained in a medical school's Department of Research in Medical Education and participate in pilot projects in continuing education which the American Heart Association conducts.

Applicants for Fellowships must hold either an M.D., Ph.D., or an Sc.D. degree or its equivalent, and be citizens of the U. S. or Canada, or show intention of becoming citizens of these countries.

To meet the needs of candidates with varied backgrounds and experience, stipends are determined on the basis of qualifications. They begin, however, at the senior post-doctoral level.

Applications may be made through the Director of Medical Education, American Heart Association, 44 East 23rd Street, New York, N. Y. 10010.

The American Geriatrics Society has announced the renewal of 3 grants of $1,800 each to stimulate more extensive study of the medical problems of the aging by resident physicians. The grants will be used to augment the salaries of residents interested in geriatrics while they continue their medical education. The funds are donated by Lederle Laboratories, Division of American Cyanamid Company, to cover the period July, 1965 to June, 1966. Applications for the grants should be addressed to the Chairman, Fellowship Committee, American Geriatrics Society, 10 Columbus Circle, New York 19, N. Y. 10019.

Dr. Robert S. Gordon, Jr., of Kensington, Md. has been named **Clinical Director of the National Institute of Arthritis and Metabolic Diseases** at the National Institutes of Health. A 1949 graduate of Harvard Medical School, he has been affiliated with NIH since 1951.

The Prevention of Blindness Society has published a new pamphlet, **"Hopeful Facts about Cataract,"** which is free on request. It is particularly encouraging for people who are facing a cataract operation. The pamphlet may be secured from the Society by calling 737-0377, or by writing to its offices, 917-15th Street, N.W. (20005).

Three new **Regional Temporal Bone Banks Centers** have been established under the sponsorship of the Deafness Research Foundation. The purpose of the Centers is to coördinate the acquisition and distribution of inner ear structures which have been bequeathed to the 38 Temporal Bone Banks Laboratories for Ear Research during the donor's lifetime. The Regional Centers are located in Chicago, Houston, San Francisco, and Baltimore. The last will be known as the Eastern Regional Temporal Bone Banks Center and will be operated under the direction of Dr. John E. Bordley of Johns Hopkins University and Hospital.

The Maryland-District of Columbia Society of Anesthesiologists elected new officers, April 1, at a meeting in the D. C. Medical Society's Library. They are:

Dr. Mary Louise Barker, *President*; Dr. Salomon N. Albert, *President-elect*; Dr. Thomas E. MacNamara, *Vice President*; Dr. Kamel J. Hassan, *Secretary*; and Dr. Helene G. Werner, *Treasurer*.

New officers of the **Alexandria (Virginia) Medical Society** are:

Dr. T. F. McGough, *President*; Dr. Robert H. Anderson, *President-elect*; Dr. M. Hayne Kendrick, *Vice President*; Dr. Lawrence H. Shuman, *Secretary*; and Dr. James H. Carpenter, *Tresaurer*.

The Northern Virginia Academy of Internal Medicine elected the following officers, January 19:

Dr. Robert L. Guillaudeu (Falls Church), *President*; Dr. John W. Roark (Alexandria), *President-elect*; Dr. William L. Stone (Arlington), *Secretary*; and Dr. Simon Paluch (Alexandria), *Treasurer*.

This organization was formerly known as the Northern Virginia Society of Internal Medicine.

Physicians interested in **combining travel with postgraduation education** may want to plan now to attend the XIth International Congress of Pediatrics to be held in Tokyo, Japan, November 7–13, 1965. A North American Congress Tour is being organized for members of

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the AMA and their immediate families which will be a round-the-world trip by air travel at reduced group fare. There will be visits to Japan, Hongkong, Bangkok, India and Egypt, with return via Amsterdam. Interested physicians may write to Dr. Rudolph Engel, Associate Professor of Pediatrics, University of Oregon Medical School, 3181 S.W. Sam Jackson Park Road, Portland, Oregon 97201.

The new **Jefferson Memorial Hospital** at 4600 King Street in Alexandria, Va. held open house for visitors, March 14. The 3-story, 100-bed hospital, ultramodern in concept and equipment, was built by 11 area doctors as a nonprofit institution at a cost of $1,500,000. President is Dr. Laszlo N. Tauber.

Personals

Dr. John Parks, Dean of George Washington University School of Medicine, has been elected President of the National Board of Medical Examiners. The election was made at the Board's 50th Anniversary Conference in Philadelphia in March.

Members of the National Board represent the Federation of State Medical Boards, the American Medical Association's Council on Medical Education, the Association of American Medical Colleges, the Armed Services, the Public Health Service, and the Veterans Administration. Members at large are elected from among leaders in medicine throughout the country.

Dr. John D. Porterfield has been named Director of the Joint Commission on Accreditation of Hospitals. He succeeds Dr. Kenneth B. Babcock, who resigned a year ago. Dr. Porterfield has served as Coördinator of Medical and Health Sciences at the University of California in Berkeley. He was formerly Deputy Surgeon General of the U. S. Public Health Service. He is an Associate member of the American Medical Association and the D. C. Medical Society.

Dr. V. T. DeVault, formerly Associate Secretary-General of the International College of Surgeons, has been appointed the first international field representative of the American Medical Association. Dr. DeVault, a multilingual surgeon, will spend much of his time with members of the medical profession in other countries where he will contact organized medical groups and arrange AMA assistance when it is practicable, needed and wanted.

Dr. DeVault was an Active member of the Medical Society while serving in Washington as Medical Director of the Foreign Service and Department of State. He is continuing his affiliation with the Society as an Associate member.

Dr. Wallace M. Yater was reëlected Secretary-General of the American College of Physicians, March 25, during its Golden Anniversary Session, held at the Conrad Hilton in Chicago, March 22–26. He has held this position since 1956.

At the same meeting **Dr. Theodore J. Abernethy** was elected a Regent of the College for a 3-year term. He served during the preceding year as Third Vice President.

Dr. Arnulfo S. Rosario, medical officer in the Division of Radiology, D. C. General Hospital, has been appointed Clinical Assistant Professor in Radiology at Georgetown University School of Medicine. Dr. Rosario, an Associate member of the D. C. Medical Society, is certified by the American Board of Radiology and Nuclear Medicine; he was formerly on the teaching staff of the Hahnemann Medical College and Hospital in Philadelphia.

Dr. John R. Cavanagh, who has spent the past year in Italy, has returned to Washington and resumed his practice of psychiatry on May 1. His new address is 3225 Garfield Street, N.W.; telephone 337–3725.

Preceding Dr. Cavanagh came a review copy of his new book, "The Popes, the Pill, and the People; a Documentary Study," sent to the Society's offices by the Bruce Publishing Company of Milwaukee.

Correspondence

Kudos for Doctors Symphonetta

DEAR DR. CONSTANTINOPLE:

On behalf of the patients and the Board of Managers I wish to thank you and the other members of the Doctors Symphonetta for the wonderful concert you gave here last night [January 25].

It is through such thoughtful acts as these that we are able to make this a real "Home" for our patients. Thank you again and I hope you can return at some future date.

Mrs. William Sharon Farr
President, Board of Managers,
The Washington Home for Incurables

Written on the front of your program in large writing was one word—"wonderful"—by one of the lucky people who heard the doctors at the Home for Incurables the other evening.

With the arrival of some instruments earlier, which started the excitement, and then the concert, it really was a memorable day for all, and we hope very much that the Symphonetta will come again.

With many thanks and much gratitude from everyone,

Mrs. Henry H. Balch, Jr.
Chairman of Entertainment,
The Washington Home for Incurables

Editor's note: Dr. P. S. Constantinople, Chairman of the Music Committee, hopes that these letters will stimulate physicians who are not now sponsors ($25 or more) or sustainers ($5 to $20) to become orchestra supporters by mailing a check, payable to "The Doctors' Symphonetta," to the Medical Society of the District of Columbia, 1718 M Street, N.W., Washington, D.C. 20036.

Obituaries

Walter Wellington Price, M.D.

(1885–1965)

Dr. Walter W. Price, who practiced medicine in the District of Columbia and Maryland for more than 50 years, died, February 1, 1965 at his home, 4918 Hillbrook Lane, N.W.

Dr. Price was born to Eli and Rebecca Ann Price in Washington, D. C., July 19, 1885. After graduating from George Washington University School of Medicine in 1910 he interned at Emergency Hospital for a year and spent another year at Children's Hospital as resident physician. In 1912, also, he went to Harvard University for postgraduate study in pediatrics and pathology. He was licensed to practice in the District of Columbia in 1912. He began his practice in Frederick County, Md., in 1914.

Dr. Price was elected to Active membership in the Medical Society of the District of Columbia in 1920 and became a Life member in 1960. He was a member of the American Medical Association. He belonged to the Lafayette Masonic Lodge and the Southwest Harbor Lions Club and was active as a Board member of the Metropolitan Memorial Methodist Church.

Surviving him are his wife, Mrs. Mildred Stauffer Price, and 3 sons: Dr. John W. Price, who was associated with him in practice at 2412 Minnesota Avenue, S.E.; Dr. Walter S. Price, of Newport News, Va.; and Robert N. Price, of Bethesda, Md.

Carlton Newman Price, A.B., M.D., F.A.C.S.

(1906–1965)

Dr. Carlton N. Price, obstetrician and gynecologist, died, March 1, 1965, at his home, 4469 Que Street, N.W. He retired from practice last year.

Dr. Price was born in Syracuse, New York, November 8, 1906, to George and Mary Newman Price. He received both his undergraduate and medical degrees from Syracuse University, the latter in 1933. He interned at St. Margaret Memorial Hospital in Pittsburgh the following year, and in 1934–35 he was a resident physician in obstetrics at Johns Hopkins Hospital. For further postgraduate study in obstetrics and gynecology he went abroad for a year and then returned to the States to train at the St. Louis (Mo.) Maternity Hospital and the New York Postgraduate Hospital.

Dr. Price began the private practice of his specialty in Rochester, N.Y. During the War years he served in the Medical Corps of the Army, from 1942 to 1946, and held the rank of Major. After his service he opened his practice in Washington, where he was on the Associate staffs of Columbia and Georgetown University Hospitals. He was formerly on the medical faculty of Georgetown University as Clinical Assistant Professor of Obstetrics and Gynecology.

He was a diplomate of the American Board of Obstetrics and Gynecology. He was elected to Active membership in the Medical Society of the District of Columbia in 1946 and just before his death was transferred to Special status. He was a Fellow of the American College of Surgeons and a member of the North Carolina State Gynecological Society and the Washington Gynecological Society. He also belonged to the Congressional Country Club.

He leaves his wife, Mrs. Virginia Cook Price, a daughter, Pamela, and a son, Gregory G., all living at home; also 2 other sons, Paul Price, of Wichita Falls, Kan., and Carlton N. Price, Jr., of Logan, Utah.

Melvin Oscar Goodman, A.B., M.D.

(1911–1965)

Dr. Melvin O. Goodman, Washington radiologist, died, February 6, 1965, at the Washington Hospital Center. His offices were at 1930 K Street, N.W.

Dr. Goodman was born in Concord, New Hampshire, May 17, 1911, to Morris and Rose Goodman, who survive him. He received his undergraduate degree from Brown University, Providence, R.I., in 1932 and his medical degree from Rush Medical College (University of Chicago) in 1936. He interned for a year at the Jersey City (N.J.) Medical Center and practiced in Manchester, N.H., before he was commissioned in the Army Medical Corps in 1941. After 4½ years of service he was released from active duty with the rank of Major. As a Reserve Officer he was promoted to Lt. Colonel in 1947.

After the War, Dr. Goodman trained in radiology at Montefiore Hospital, Bronx, N.Y., and at Mt. Sinai Hospital in New York City. He established his private practice in radiology in the District of Columbia in 1949. He was staff radiologist for the Hebrew Home for the Aged, and he took an active part in the work of the Adas Israel Congregation.

Dr. Goodman was elected to Active membership in the D.C. Medical Society in 1949 and at the time of his death was Chairman of its Section on Radiology. He was a diplomate of the American Board of Radiology, and a member of the American Medical Association and the Jacobi Medical Society. He also belonged to the Woodmont Country Club, the Army and Navy Club, and the Big Brothers of America.

In addition to his parents, who now live in St. Petersburg, Fla., he leaves his wife, Mrs. Adele Chessin Goodman, of the home address, 5019 Reno Road, N.W.

Magdaleno L. Jardeleza, M.D.

(1890–1965)

Dr. Magdaleno L. Jardeleza, Veterans Administration physician, died, January 5, 1965, at Sibley Memorial Hospital. His home was at 2803 Ontario Road, N.W.

Dr. Jardeleza was born in Bacolod, Philippine Islands, June 22, 1890. After receiving his early education in Bacolod and Manila, he came to the States, enrolling for premedical study at Valparaiso College of Medicine in Indiana. He graduated in medicine from Baylor University in 1921. For 2 years he interned at Parkland City Hospital in Dallas.

He returned to the Philippine Islands to serve with the Philippine Health Service from 1923 to 1927. From 1924 to 1942 he was Physician-in-Charge of the Hawaiian-Philippine Company Hospital. In 1945 he joined the U. S. Veterans' Benefits Office in Washington, serving as Medical Officer, rating specialist, with offices in the Munitions Building.

While on the Islands he belonged to the Occidental Negros Medical Association, which he served as Secretary from 1935 to 1941, and the Philippine Islands Medical Association. He was elected to Associate membership in the Medical Society of the District of Columbia in 1956.

He leaves his wife, Mrs. Artie Gintz Jardeleza.

Patient Monitoring—Coakley and Russell

(*Continued from page 218*)

Already we have found central monitoring to be both practical and helpful. Much additional investigation needs to be done in the development of instruments and in data analysis. The end-result of central monitoring will be the use of the operating, special care and recovery rooms as laboratories with better patient observation, increased salvage of the critically ill, and greater safety for all patients.

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5-8 yr.	1 tsp. q.i.d. (8 mg.)
8-12 yr.	1 tsp. 5 times daily (10 mg.)
Adult	2 tsp. 5 times daily (20 mg.) (or 2 tablets q.i.d.)

*Based on 4 cc. per average teaspoonful.
Note: After diarrhea is controlled the initial dosage can usually be reduced to meet the requirements of the individual patient.

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Cautions and Side Effects
Side effects are relatively uncommon but among those reported are gastrointestinal irritation, sedation, dizziness, cutaneous manifestations, restlessness and insomnia.

Lomotil is a brand of diphenoxylate hydrochloride with atropine sulfate; the subtherapeutic amount of atropine is added to discourage deliberate overdosage.

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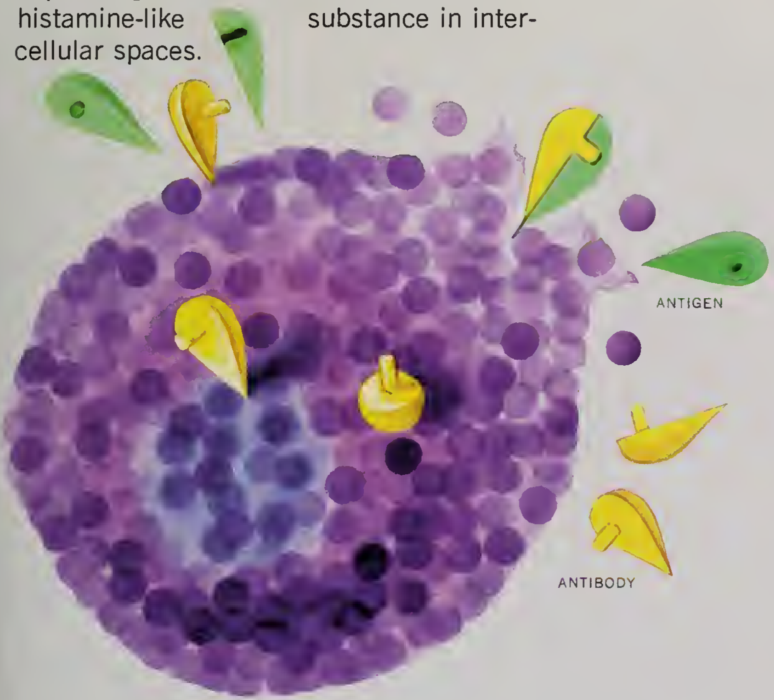
GEORGE L. BRICKER

in theory, allergy begins like this:

When antigens invade the body, antibodies, formed chiefly by plasma cells, may become attached to mast cells. If the same antigen reappears and reacts with the antibodies, the mast cell disrupts (as pictured below). Subsequently, the "exploding" mast cell deposits granules of bound histamine or histamine-like substance in intercellular spaces.



in allergy, Dimetane® Extentabs®

(brompheniramine maleate, 8 mg. & 12 mg.)

work with no more sedation than placebo*

Although the mechanisms of allergy are still theoretical, the response to Dimetane (brompheniramine maleate) is ample proof that a good antihistamine can, and does, work—and (as reported in one investigation*) with no more sedation than placebo. Dimetane (brompheniramine maleate) assures your allergy patients prompt relief of symptoms while usually permitting them to lead active, alert lives. And a single Extentab provides continuous action for up to 10-12 hours.

*Schiller, I.W. and Lowell, F.C.: New England J. Med. *261*:478, 1959.

BRIEF SUMMARY: *Contraindications:* Hypersensitivity to antihistamines. Not recommended for use during pregnancy. *Precautions:* Until response is determined, patient should be cautioned against engaging in mechanical operations requiring alertness. *Side Effects:* Hypersensitivity reactions, including skin rashes, urticaria, hypotension, and thrombocytopenia have been reported rarely. Occasional transitory drowsiness, lassitude, nausea, giddiness, dryness of the mouth, mydriasis, increased irritability or excitement may be encountered. *Other dosage forms available:* conventional tablets (4 mg.); Elixir (2 mg./5 cc.); Injectable (10 mg./cc. ampuls, and 100 mg./cc. in 2 cc. vials).

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Extentabs
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basic therapy in low-back pain: bed, board, heat

Whether low-back pain is in the chronic or acute phase, the appropriateness of bed rest for such a patient is beyond controversy. Boards placed under the mattress, for a firmer bed to further immobilize the spine, are another common recommendation. And most investigators consider heat beneficial—moist heat in particular.[1-5]

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(methocarbamol 750 mg.)

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brand of
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750 mg.
in each tablet
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It has been noted that low-back disorders frequently "...are caused by truly mechanical conditions which yield to conservative treatment."[1] Basic to this conservative treatment are bed rest, a board for the bed, and applied heat. In addition, a good muscle relaxant is often helpful, as "...muscle relaxants are useful in chronic as well as acute low backaches."[4]

Robaxin (methocarbamol) has relieved spasm and pain in cases where the patient "had not responded to conservative measures prior to drug therapy."[6] A 100-patient study showed that Robaxin provided greater relief of muscle spasm for a longer period of time without adverse reactions "than any other commonly used relaxants...."[6]

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Significantly, clinicians advise using a muscle relaxant "early and in adequate dosage."[8] In this regard, Robaxin (methocarbamol)—*particularly in the 750 mg. dosage (2 tabs. q.i.d.)*—offers optimal therapeutic benefits without a significantly increased incidence of side effects. And just as it works well as part of the basic regimen for low-back pain, so also does Robaxin (methocarbamol) often provide muscle relaxation in such conditions as musculoskeletal injury, chronic neurological disorders, and orthopedic situations.

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REFERENCES: 1. Soto-Hall, R.: Med. Sci. *14*:23, 1963. 2. McCarrol, H.R.: Paper read at the Annual Meeting of the American Medical Association, Atlantic City, June 16-20, 1963. See Medical News: J.A.M.A. *185*:39 (July 13), 1963. 3. Gordon, E.J.: Med. World News *5*:54, 1964. 4. Cozen, L.: GP *26*:82, 1962. 5. Larson, C.B.: Postgrad. Med. *26*:142, 1959. 6. Forsyth, H.F.: J.A.M.A. *167*:163, 1958. 7. Weiss, M., and Weiss, S.: J. Amer. Osteopath. Ass. *62*:142, 1962. 8. Rowe, M.L.: J. Occup. Med. *2*:219, 1960.

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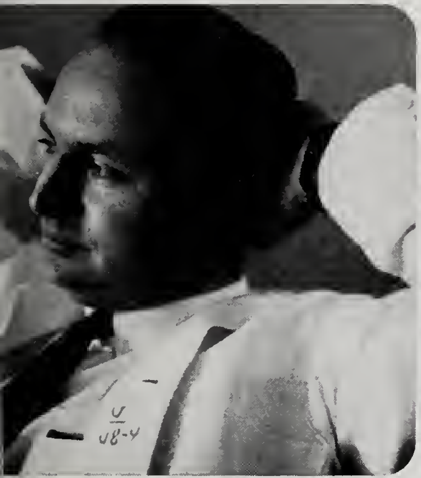

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cur; take particular care in cirrhosis or severe ischemic heart disease, and in patients receiving corticosteroids, ACTH, or digitalis. Salt restriction is not recommended. Use with caution in patients with ulcerative colitis, gallstones, or bronchial asthma.
Side Effects: Nausea, vomiting, diarrhea, muscle cramps, headaches and dizziness. Potential side effects include angina pectoris, anxiety, depression, drowsiness, hyperglycemia, hyperuricemia, lassitude, leukopenia, nasal stuffiness, nightmare, purpura, urticaria, and weakness.
For full details, see the complete prescribing information.

Average Dosage: One tablet daily with breakfast.
Availability: Bottles of 100 and 1000 tablets.

*Chupkovich, V.; Finnerty, F. A., Jr., and Kakaviatos, N.: The value of chlorthalidone plus reserpine in moderately severe and severe hypertension: A two year study. Presented at the 7th Inter-American Congress of Cardiology, Montreal, June 14–19, 1964.

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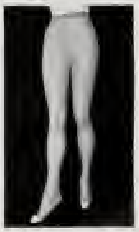
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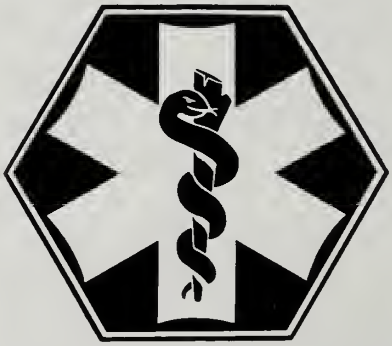

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BOOKS RECEIVED

Acknowledgment is made of the following books which have recently been received.

The Visual Fields. A Textbook and Atlas of Clinical Perimetry, 2nd ed. David O. Harrington, A.B., M.D., F.A.C.S. Price, $16.00. Pp. 386, with 318 figures and 9 color plates. St. Louis: Mosby, 1964.

Surgery of the Breast. Louis H. Jorstad, M.D., F.A.C.S., F.I.C.S. With the collaboration of Meredith Jorstad Payne, M.D., F.A.C.S. Price, $15.00. Pp. 220, with 37 line drawings by W. R. Schwarz and 33 photographs, including 5 in full color. St. Louis: Mosby, 1964.

Modern Treatment, volume 1, number 5, September 1964. Russell N. DeJong, M.D., Guest Editor for **Treatment of Epilepsy**; Carl M. Pearson, M.D., Guest Editor for **Treatment of Arthritis.** Pp. 1035–1350.

Modern Treatment, volume 1, number 6, November 1964. Arnold P. Friedman, M.D., Guest Editor for **Treatment of Headache**; Howard M. Spiro, M.D., Guest Editor for **Treatment of Acid Peptic Disease.** Pp. 1351–1556. Price (paper), $16.00 per year. New York: Hoeber Med. Div.-Harper & Row, 1964.

Industrial and Traumatic Ophthalmology. Symposium of the New Orleans Academy of Ophthalmology. Contributors: Arthur H. Keeney, M.D., Hedwig S. Kuhn, M.D., Roderick MacDonald, Jr., M.D., Frank W. Newell, M.D., Joseph F. Novak, M.D., Ralph W. Ryan, M.D., and Lorenz E. Zimmerman, M.D. Price, $14.50. Pp. 321, with 134 illustrations. St. Louis: Mosby, 1964.

Common Bacterial Infections. Pathophysiology and Clinical Management. Colonel Edwin J. Pulaski, M.C., U. S. Army. Price, $8.50. Pp. 301, with 50 illustrations. Philadelphia: Saunders, 1964.

Scintillation Scanning in Clinical Medicine. Based on a Symposium sponsored by the Department of Radiology of the Bowman Gray School of Medicine. James L. Quinn III, M.D., Editor. Price, $11.50. Pp. 278, illustrated. Philadelphia: Saunders, 1964.

Rehabilitation Medicine. A Textbook on Physical Medicine and Rehabilitation, 2nd. ed. Howard A. Rusk, M.D., and 36 Collaborators. With the editorial assistance of Eugene J. Taylor, A.M. Price, $15.50. Pp. 668, with 210 figures and 26 charts. St. Louis: Mosby, 1964.

The Retinal Vessels. Comparative Ophthalmoscopic and Histologic Studies on Healthy and Diseased Eyes. R. Seitz, M.D. Translated by Frederick C. Blodi, M.D. Price, $14.50. Pp. 186, with 363 illustrations, including 32 in color. St. Louis: Mosby, 1964.

Experience in Renal Transplantation. Thomas E. Starzl, Ph.D., M.D. Price, $17.00. Pp. 383, with 174 illustrations. Philadelphia: Saunders, 1964.

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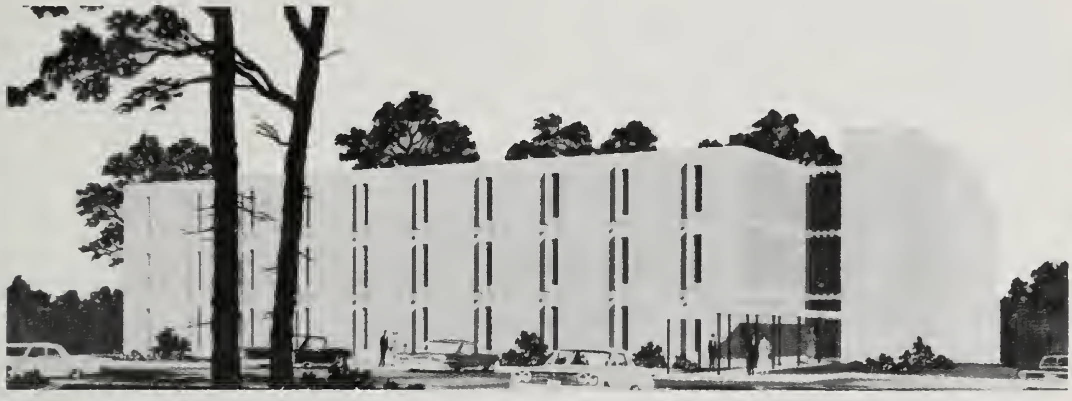

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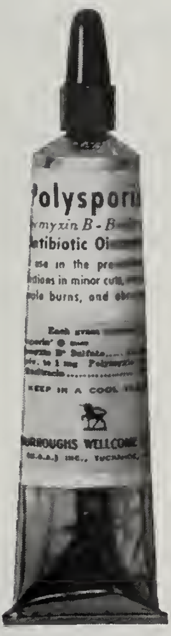

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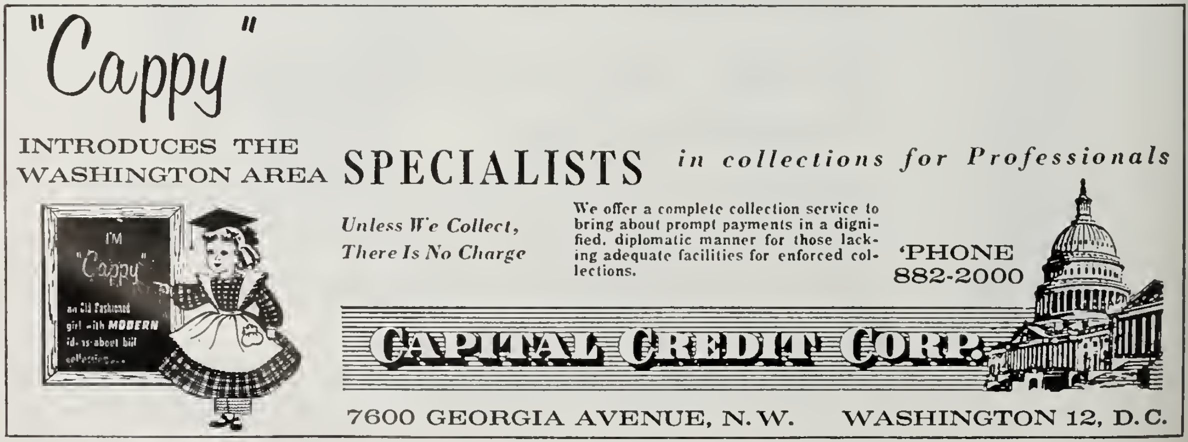

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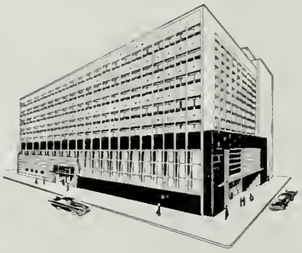

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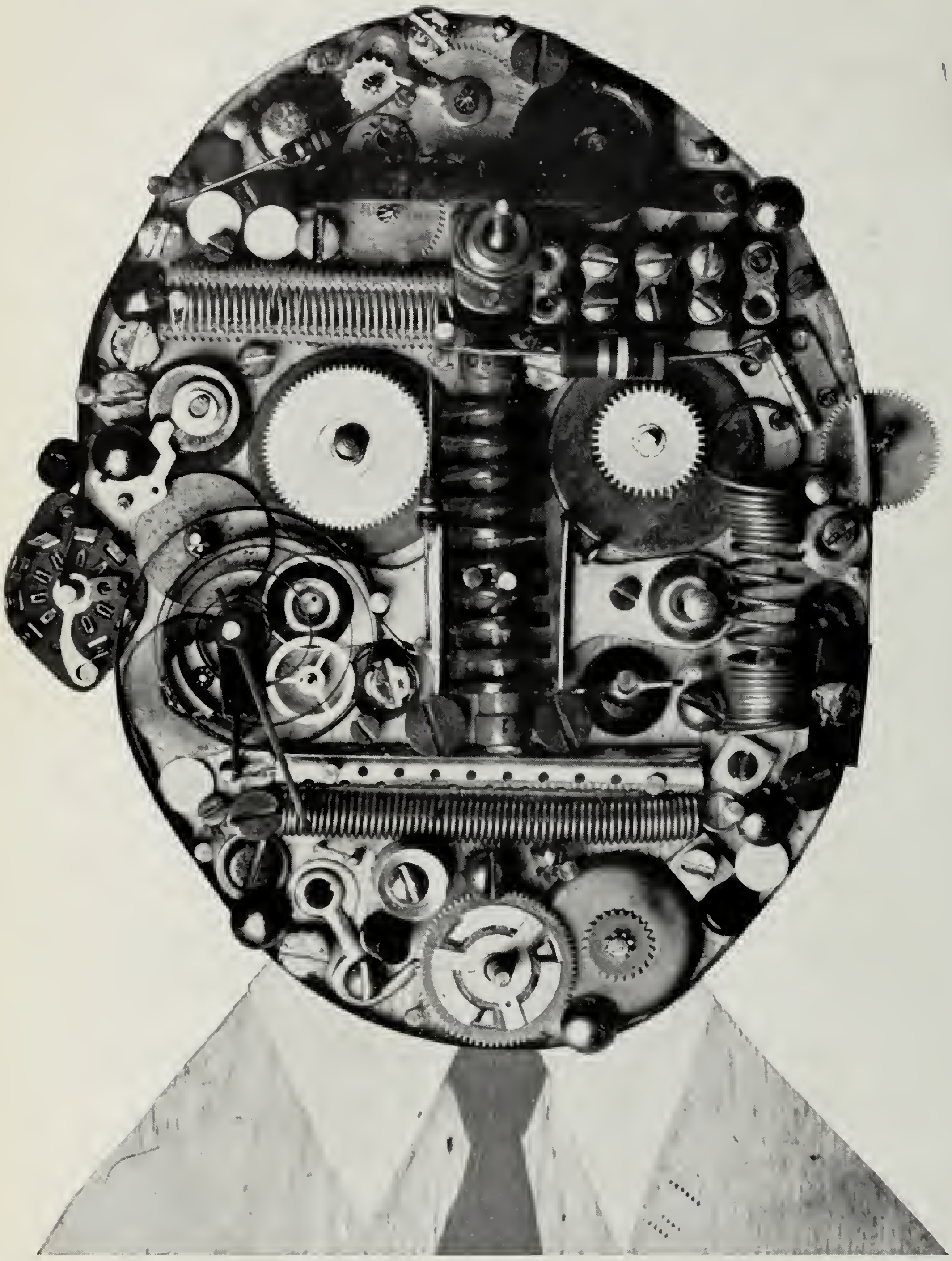

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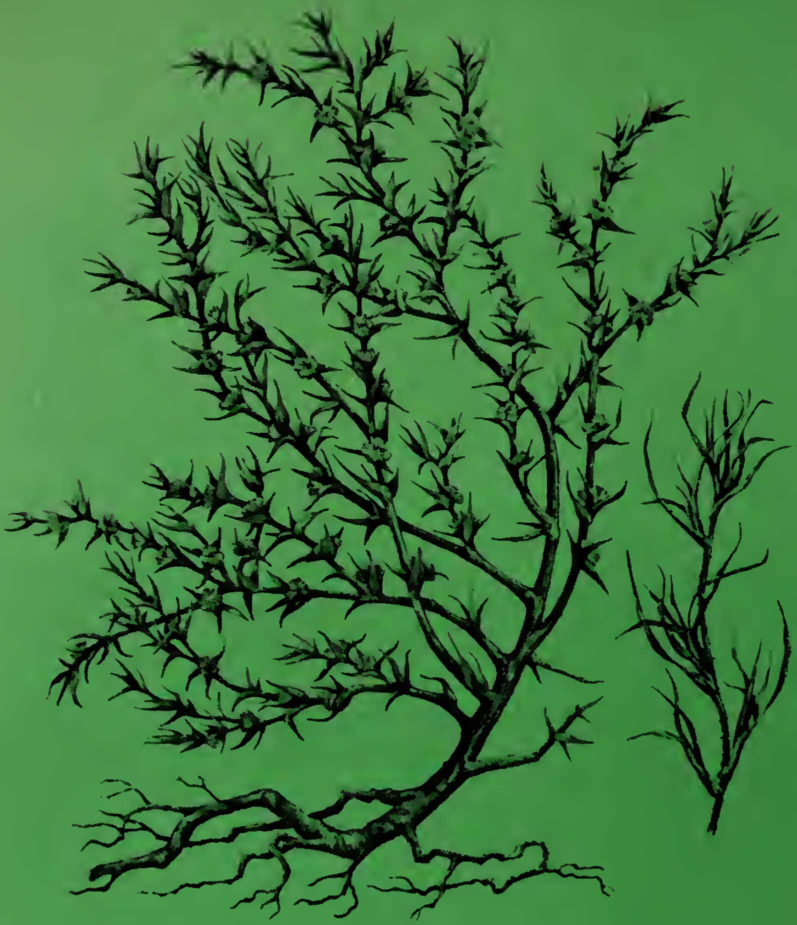

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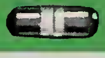

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(1) Frykman, H.M.: Minn. Med., Vol. 38, Jan. 1955. (2) Poth, E.J.: The J.A.M.A., Vol. 163, No. 15, April 13, 1957. (3) McGivney, J.: Texas State Jour. of Med., Vol. 51, No. 1, Jan. 1955. (4) Stern, F. H.: Jour. of The Amer. Ger. Soc., Vol. 11, No. 3, Mar. 1963. (5) Weekes, D. J.: N.Y. State Jour. of Med., Vol. 58, No. 16, Aug. 1958. (6) Abbott, P.L.: Jour. of Oral Surg., Anes. & Hosp. Dental Serv., Vol. 19, July 1961. (7) Weekes, D. J.: E.E.N.T. Digest, Vol. 25, No. 12, Dec. 1963.

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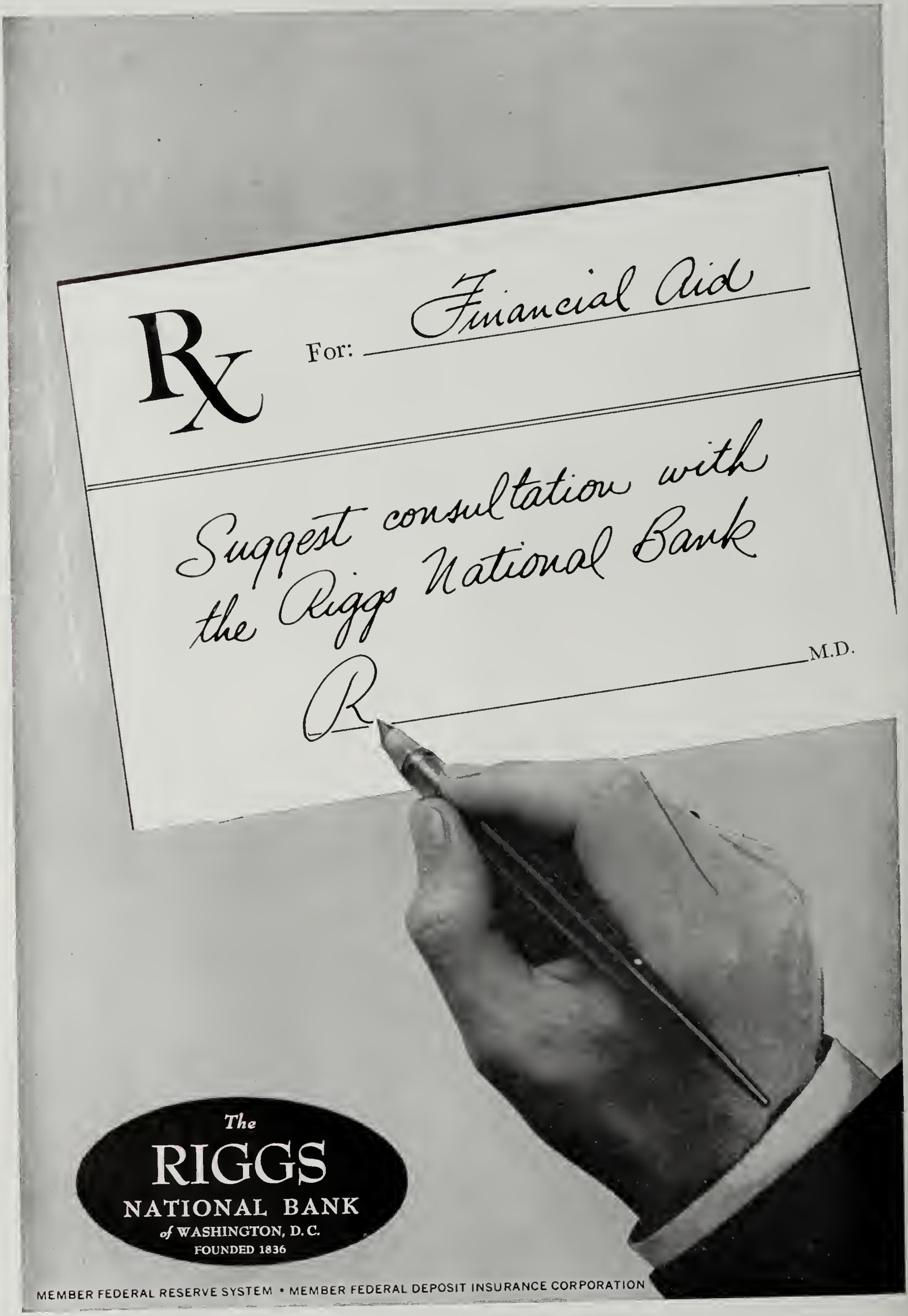

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Yearly Subscription, $4.50
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Second-class postage paid at Baltimore, Md.
Published monthly at
Mount Royal and Guilford Avenues,
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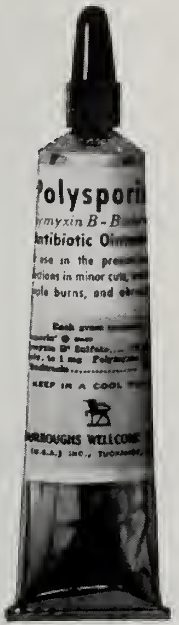

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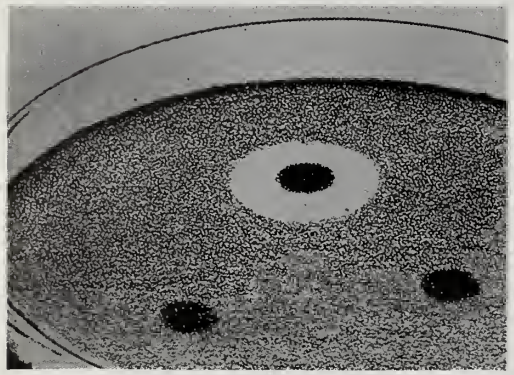

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References: (1) Carroll, G.: Urologists' Letter Club, June 1, 1964. (2) McDonald, D. F., and Short, H. B.: Address to the Fourth Interscience Conference on Antimicrobial Agents and Chemotherapy, New York, Oct. 26-28, 1964.

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* AMA Council on Foods and Nutrition: The Regulation of Dietary Fat, *JAMA* 181:411-423 (August 4, 1962).
AMA Council on Foods and Nutrition: Composition of Certain Margarines, *JAMA* 179:719 (March 3, 1962).

BOOK REVIEWS

Medical Department, United States Army: Blood Program in World War II. COLONEL JOHN BOYD COATES, JR., M.C., Editor-in-Chief, AND ELIZABETH M. MCFETRIDGE, M. A., Associate Editor. Prepared and published under the direction of LIEUTENANT GENERAL LEONARD D. HEATON, The Surgeon General, United States Army. Price, $8.00. Pp. 922, with 195 illustrations, 42 tables, 14 charts and 7 maps. Washington 25, D. C.: Superintendent of Documents, U. S. Government Printing Office, 1964.

First and foremost, this is an amazingly detailed history book. Despite this, it is easy to read, and because of its relation to the history of the Second World War in general it is interesting reading. The background material on procedures we take for granted now (such as the use of low titer O blood) was particularly engrossing. The book begins with historical notes, including information about blood transfusion programs of the Spanish Civil War, and concludes with a long and pertinent chapter on the Korean War. A foreword by General Heaton and a preface by Brig. General Douglas B. Kendrick are very enlightening and tell frankly of our unpreparedness in regard to utilizing the experience of others and our own in formulating and implementing a blood program for World War II and the Korean War. Thanks to the efforts of General Kendrick and many others, the problems were overcome and safe blood was available in ample quantities for our troops, wherever they were. The book clearly depicts the role of blood in front line resuscitation, and with almost unbelievable detail it discusses the research, the administrative and logistic problems, and the men who were responsible. It is well illustrated both from the standpoint of interest and history. The use of case histories and the description of the experiences and thinking of men in the field add real drama to this book. I recommend it not only to men interested in blood but to anyone who would like to see behind the scenes as history unfolded in World War II.

JACK J. RHEINGOLD, M.D.

Laboratory Methods in Blood Coagulation. JAMES W. EICHELBERGER, JR. With a Foreword by William H. Crosby, M.D. Price (paper), $2.95. Pp. 95. New York: Hoeber Med. Div.-Harper & Row, 1965.

Mr. Eichelberger is the chief coagulation technologist at Walter Reed Army Institute of Research. He has been involved in coagulation techniques for over 10 years. During 2 of those 10 years I had the pleasure of working with him. I found him to have all the qualities that go to make up that rare and priceless individual—the brilliant technologist. This book is a distillation of that brilliance. It is written by an expert in coagulation techniques for physicians and technicians who are actively engaged in, or who are planning to set up the various laboratory methods necessary to study patients with problems in blood coagulation. It is basically a laboratory manual and does not attempt a great deal of theory or background. The book has a spiral binding so that it can be kept open on the laboratory bench as the test is being performed. It gives a step-by-step, easily followed outline for each test.

I highly recommend this book as a practical guide which can lead the physician or his technician through the maze of coagulation tests. I have already put my copy to use in our laboratory.

EDWARD ADELSON, M.D.

Polypoid Lesions of the Gastrointestinal Tract, Volume II in the Series, **Major Problems in Clinical Surgery.** CLAUDE E. WELCH, M.D., AND J. ENGLEBERT DUNPHY, M.D., Consulting Editor. Price, $7.50. Pp. 148, illustrated. Philadelphia: Saunders, 1964.

The author describes this monograph as a progress report. It is indeed an extensive review of current concepts and methods for handling polypoid lesions of the intestine and stomach. Since much confusion has arisen in the past 7 years concerning such lesions in the large bowel, Dr. Welch properly devotes most of the book to those of the colon and rectum, discussing those of the stomach and small bowel thoroughly but briefly. The author explains some of the confusion created by past articles due to varying criteria used by both clinicians and pathologists. He emphasizes the failure to distinguish villous papillomas from adenomatous polyps and describes a reasonable classification in keeping with today's knowledge.

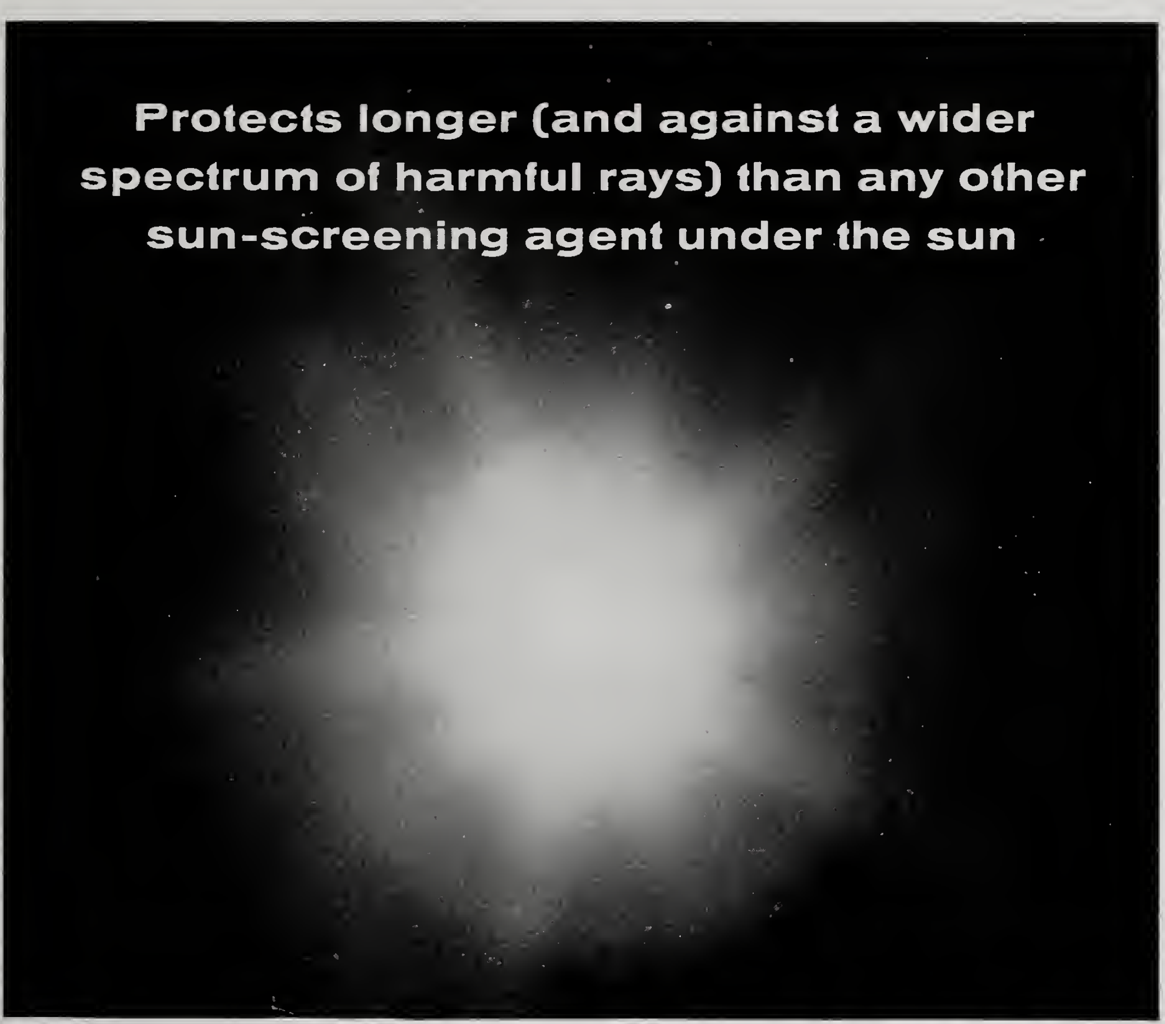
There is a thorough discussion of common important and more unusual polypoid masses as well as a general description of the policy followed by the author in patients with specific problems, such as small polypoid lesions beyond the sigmoidoscope, familial polyposis, pseudopolyps and juvenile polyps, to mention a few. Important clinical situations are emphasized by a series of case reports, and there is a brief discussion of operative techniques.

One chapter is devoted to diagnostic procedures and includes an evaluation of the limitations and accuracy of radiologic examinations. It was disappointing to find no mention of newer experimental procedures, such as silicone foam enemas or colonic cytology, in a general review such as this.

Dr. Welch discusses the problem of malignant potential in single adenomas of the colon fairly, pointing out the various arguments extant today. He personally takes a mid-position, believing that such lesions do at times become cancer but candidly admits dissatisfaction with the available evidence in this matter. He points out that Dr. Castleman, using this same case material, believes that such transition rarely if ever occurs. Spratt, Ackerman and Moyer also challenged this concept in 1958. Dr. Welch tends to believe that nearly all such lesions should be surgically removed in spite of evidence by the latter authors that patients with such lesions are less likely to have cancer than to die from an operation.

Dr. Welch has written a fine book and taken great pains in clearly presenting the problems and describing his approach to them. It should be of great interest to gastroenterologists, proctologists, and general surgeons.

JOHN S. DILLON, M.D.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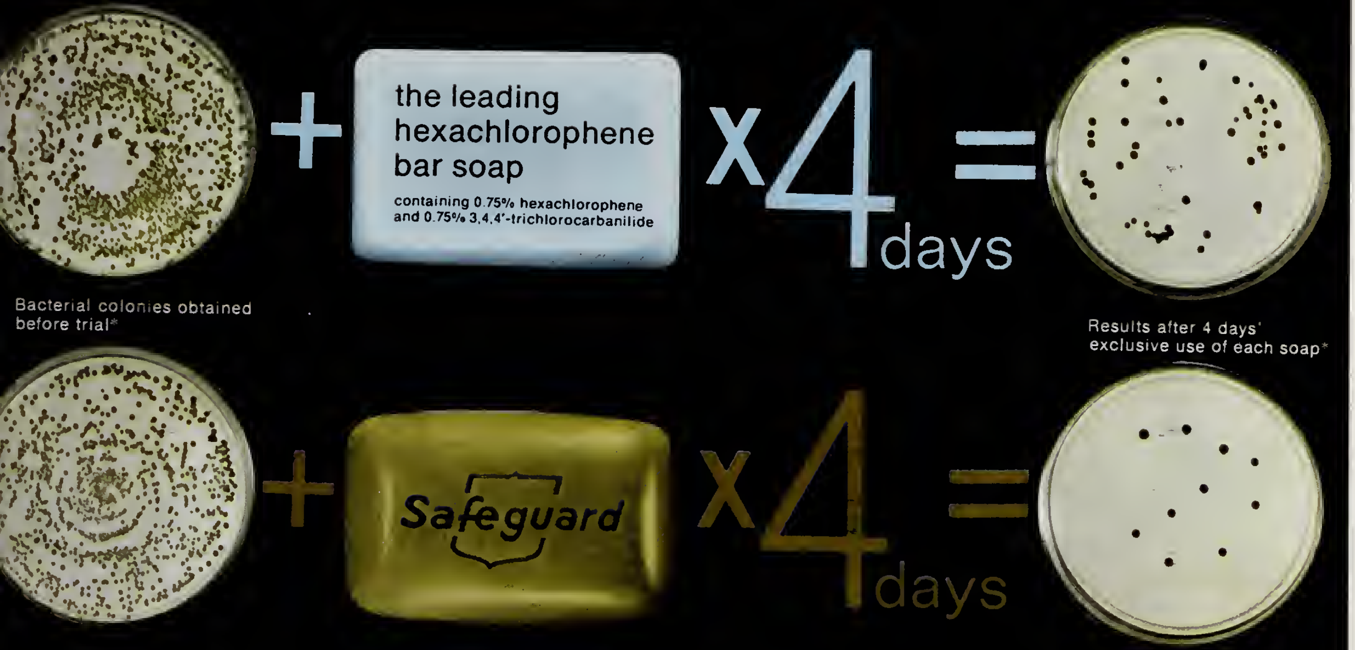
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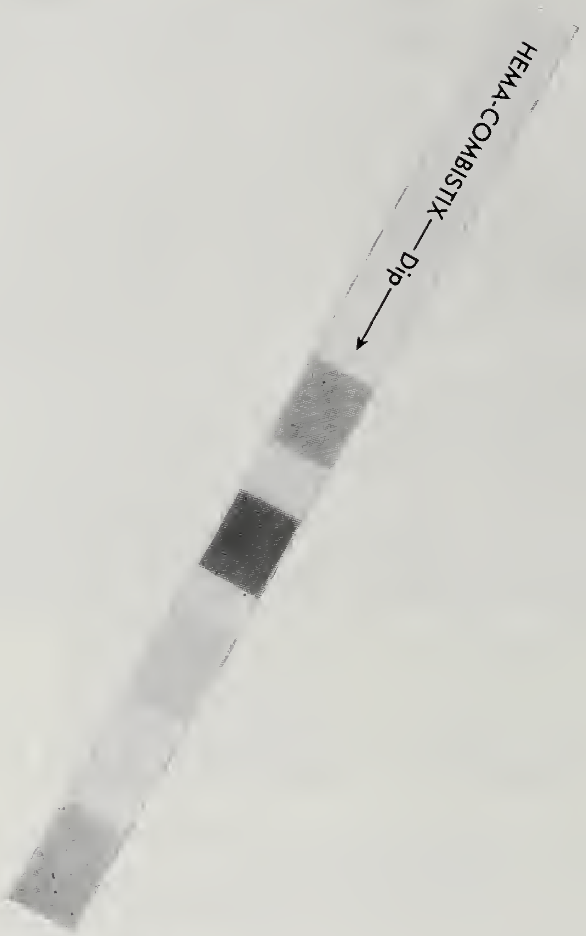

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MEDICAL ANNALS

of the District of Columbia

June 1965 VOLUME XXXIV • NUMBER 6

Pregnancy Complicated by Diabetes

Report of 102 Pregnancies Including Eleven Treated with Oral Hypoglycemic Drugs

JAMES M. MOSS, M.D., F.A.C.P.

Clinical Professor of Medicine, Georgetown University School of Medicine

EDWARD J. CONNOR, M.D.

Clinical Instructor of Obstetrics and Gynecology, Georgetown University School of Medicine

As part of the continuing effort to reduce the excessive fetal mortality rate in pregnancies complicated by diabetes mellitus the records of the 40,306 deliveries at Georgetown University Hospital between January 1949 and April 1963 have been reviewed. We have searched for factors which might affect fetal survival and have discussed how these factors might be changed. In 1956 the oral hypoglycemic drugs were introduced into the treatment of diabetes and were used in 11 of these patients.[1] A detailed assessment of this innovation in diabetic management is included.

Materials and Methods

There were 102 pregnancies in 72 diabetic patients. This included 1 set of twins and 1 set of triplets. Thirty-four (2 Negro and 32 white) of these patients were private patients, and 12 of these were attended by the senior author. Thirty-eight patients were from the clinic service, and their diabetic regulation was by the house officers in the clinic under the supervision of the senior author. Thirty-three of the clinic patients were Negro and the other 5 were white. Table 1 gives the overall results in our patients and in those reported in the literature.[2-25] Because of variations in tabulation of data the figures are not absolutely comparable, but it is remarkable that the results in most of the larger series are so similar. The frequency of maternal diabetes in this hospital is 1 in 383 deliveries and approximates the average of the rates reported in the literature.

TABLE 1: Pregnancies in Women with Diabetes Mellitus

(Results in per cent)

	Number of Pregnancies		
	This Series	From the Literature:	
		Before 1956[2]	After 1956[2-25]
	105	5,040	4,385
Spontaneous or therapeutic abortions	6	6	14
Stillborn fetus	15	15	13
Neonatal death	6	10	8
Gross fetal loss	27	31	35
Corrected fetal loss	22	30	22
Congenital abnormalities	6	—	7
Toxemia of pregnancy	23	—	19
Prematurity	17	—	15
Maternal mortality	1	—	0.1
Frequency of diabetic pregnancies	1/383	—	1/442

Maternal Mortality

Since the introduction of insulin maternal mortality has been reduced to less than 0.5 per cent.[3, 12, 18, 26] Maternal deaths have been due to renal failure in women with long-standing diabetes, to the absence of prenatal care in women with new diabetes, or to gross mismanagement at the time of delivery. It is fortunate that wide variations in diabetic control and maternal management are so well tolerated by most women. The 1 maternal death in our series occurred in the twenty-third week of the second pregnancy of a 30-year-old woman with diabetes of 18 years' duration. Her first pregnancy had ended in a spontaneous abortion in the second month 2 years earlier. She had retinopathy, neuropathy, nephropathy, hypertension and edema before she became pregnant. The edema and azotemia were not helped by treatment. She had pulmonary embolism, spontaneous labor, and then death from congestive failure.

Report of Fatal Case

A.M. (147193), a 30-year-old white woman, gravida II, Para 0, abortion I, had had diabetes mellitus since the age of 12. She had had adequate medical supervision for the first 2 years, but for the next 10 years she had had none. At the age of 26 she had diabetic retinopathy, proteinuria, hypertension, dependent edema, and diabetic neuropathy. She became totally blind at 29. Her first pregnancy, at 28, ended with a spontaneous abortion in the second month. During the second pregnancy the edema, hypertension and proteinuria persisted in spite of the use of diuretic agents. The diabetes was well controlled during this pregnancy and she was given diethylstilbestrol in increasing dosage. In the twenty-third week she developed bronchopneumonia and 2 days later was spontaneously delivered of a 1 lb., 7 oz. stillborn infant. Immediately after delivery pulmonary edema and decreased urinary output developed. She never regained consciousness and died 10 days postpartum. Autopsy revealed pulmonary embolism, pulmonary edema, intercapillary glomerulosclerosis, and generalized arteriosclerosis. It is likely that the initial illness was pulmonary embolism rather than bronchopneumonia.

Stillbirths

Fifteen pregnancies resulted in the birth of stillborn infants. The 6 patients who were permitted to go beyond the thirty-seventh week might have had a successful pregnancy if earlier delivery had been carried out. Three patients had diabetic keto-acidosis on admission to the hospital and spontaneous labor before the thirty-sixth week. Four patients had polyhydramnios, 2 had pyelonephritis, and 2 had toxemia. One patient developed thyrotoxicosis during the pregnancy and had a successful pregnancy after the thyroid disease was controlled with methimazole. A woman with triplets had spontaneous delivery of 2 stillborn and 1 live baby in the thirty-third week of pregnancy. The greatest improvement in fetal mortality will result from reduction in the incidence of stillbirths.

Neonatal Deaths

Three newborn babies died of hyaline membrane disease and 3 died of atelectasis. There was 1 spontaneous vaginal delivery in the twenty-eighth week, 1 in the thirty-first week, and 1 in the thirty-seventh week. Two had cesarean sections in the thirty-fifth week because of maternal complications, and 1 had an elective section in the thirty-seventh week. Maternal complications were toxemia in 4, polyhydramnios in 4, acidosis in 1, and hyperemesis in 1. More vigorous treatment of maternal toxemia and the diagnosis and correction of electrolyte abnormalities in the infants as recommended by Usher[27] might have reduced the neonatal death rate.

Abortions and Immature Deliveries

Pregnancy terminated spontaneously before the twenty-eighth week in 6 patients (6 per cent). Two of these were in the same patient, and maternal hypoglycemia was listed as a factor. However, none of the episodes of hypoglycemia resulted in coma or convulsions, and it is doubtful that these had a significant effect upon the pregnancy. One has since had a successful pregnancy with premature delivery in the thirty-second week. Acidosis was a factor in 1 patient and renal failure in another. There was no obvious cause for the losses that occurred in the eleventh and thirteenth weeks of pregnancy.

Evaluation of Factors Influencing the Outcome of Pregnancy

All of our patients were classified according to White's criteria of severity,[4] and the results are given in table 2. Class A had elevated postprandial blood sugar, normal fasting blood sugar, and did not need insulin. There was 80 per cent fetal salvage in the 12 pregnancies in this class. Class B had the onset of diabetes after the age of 20 with a duration of less than 10 years and no detectable vascular changes. There was 69 per cent fetal salvage in the 45 patients in this category. Class C had no detectable vascular changes, but the diabetes was either of 10 to 19 years' duration or the onset was between the ages of 10 and 20 years. There was 62 per cent fetal salvage in 39 patients in this class. Class D had the onset before the age of 10, diabetes of more than 20 years' duration, or retinopathy. The 5 patients in this class all had a successful pregnancy. Class E had all of the changes mentioned above plus calcification of the pelvic vessels. We had no patients in this class because we do not feel that pelvic roentgenograms for vascular calcification are justified in pregnant women. Class F patients had chronic proteinuria, retinopathy, and nephropathy. The 1 patient in this group was our 1 maternal fatality. From these data and the results from the literature which are summarized in table 2 it is apparent that this classification provides a useful prognostic guide. It has been observed in our patients and also in the literature that patients with vascular and renal disease tend to have small babies rather than large ones.

TABLE 2: Fetal Salvage According to White's Classification[4]

	Present Series		Kyle's Series[26]	
Class	No. of Patients	Fetal Salvage (Per cent)	No. of Patients	Fetal Salvage (Per cent)
A	12	80	80	78
B	45	69	742	84
C	39	62.9	536	81
D	5	100	407	75
E	—	—	30	70
F	1	0	43	63

Congenital Anomalies

Four of the 6 infants with congenital anomalies survived. One who did not had coarctation of the aorta and intrapartum death due to shoulder dystocia. Three babies had a cleft palate and harelip. One of these had no right kidney, and another had clubfeet and was stillborn. One infant had a horseshoe kidney and 1 had 6 fingers on 1 hand. We cannot correlate the abnormalities with any peculiarities of the pregnancy. An increased incidence of fetal abnormalities in diabetic pregnancies has been reported by others.[2, 3, 6, 28, 29]

Keto-acidosis

Diabetic acidosis carries with it a fetal death rate of 19 to 52 per cent.[6, 7, 8, 12] In this series (table 3) there were 11 episodes of acidosis, and in 7 of these (64 per cent) there was fetal death. In 2 of these patients there was no previous prenatal care. In 2 others the acidosis was the result of intercurrent infection. In the other 7 the problem was one of inadequate supervision of diabetic care. Diabetic acidosis rarely occurs when there is adequate communication between a conscientious patient and a skillful physician. It is essential that these patients test their urine for sugar 4 times each day and that they test for ketones whenever there is intense glycosuria or any new symptom. We recommend that they contact the physician and start supplemental injections of regular insulin whenever heavy glycosuria is associated with ketonuria. None of the patients who developed keto-acidosis had followed this routine.

Because of the decreased renal threshold that occurs during pregnancy it is common for patients to have glycosuria with little elevation of the blood sugar. The renal threshold and the insulin requirements change as the pregnancy progresses. It is therefore essential for blood sugar determinations to be done every 1 to 3 weeks during the pregnancy. The physician can then correlate the results of the blood and urine tests with the patient's symptoms and change the insulin dose as indicated. Too long an interval between blood-sugar determinations and physicians' visits adds to the hazards of pregnancy. We make it a practice to obtain blood-sugar specimens before meals in order to measure the lowest point of the blood-sugar curve. Postprandial blood-sugar determinations are valuable screening tests for diabetes but are of little value in the routine management.

TABLE 3: Complications Associated with Pregnancy and Diabetes

Complication	No. of Patients	Fetal Loss	
		No.	Per cent
Acidosis	11	7	64
Polyhydramnios	18	9	50
Pyelonephritis	16	3	19
Toxemia	24	6	25
Hypertension	3	0	0
Hypoglycemia	4	2	50
Hyperemesis	2	1	50
Thyrotoxicosis	1	1	100

Polyhydramnios

The incidence of polyhydramnios is difficult to determine because of the inexact criteria used for this diagnosis. In this series there were 18 patients (table 3) with polyhydramnios, and this was associated with a fetal mortality rate of 50 per cent. The high fetal mortality rate associated with polyhydramnios has been noted by others,[12] and this condition has been considered to be an indication for the early termination of pregnancy.[3] Some authors have recommended transabdominal amniocentesis as a therapeutic measure, but we have not used this method of treatment. We have the impression that polyhydramnios is less of a problem in patients who maintain better diabetic control and who are given diuretics in a more liberal manner.

Pyelonephritis

Pyelonephritis was diagnosed in 16 patients and was associated with fetal death in 3 (19 per cent) of these. The harmful effects of pyelonephritis on the fetus of nondiabetic women has been documented by Kass,[30] who reported a 17 per cent perinatal mortality. Since urinary tract infections are so common, the possibility of asymptomatic bacilluria should be kept in mind at each prenatal visit. Any documented urinary tract infection should receive intensive and prolonged treatment.[31]

Toxemia

Toxemia was diagnosed in 24 patients and was associated with fetal death in 6 (25 per cent). Hypertension was diagnosed in 3, with no fetal deaths. The differential diagnosis of hypertension, toxemia, pyelonephritis, and intercapillary glomerulosclerosis was made on a clinical basis with few specific tests to verify this. Some patients who were diagnosed as having toxemia undoubtedly had preëxisting but undiagnosed renal disease and not true toxemia. Where there was obvious renal disease manifested by uremia, proteinuria, and marked sodium retention the fetal prognosis was poor. When there was only sodium retention the prognosis was good.

Hypoglycemia

The harmful effects of maternal hypoglycemia have not been well documented in the literature. Four patients had hypoglycemia of sufficient intensity to be recorded, and there were 2 previable deliveries in them (table 3). Other patients had normal deliveries after having had several mild unrecorded episodes of hypoglycemia. Hypoglycemia is not consistent with good diabetic management and should be avoided even though it has not been proved to harm the fetus.

Time of Delivery

In an effort to reduce the deaths in utero during the last few weeks of pregnancy it is common practice to terminate the pregnancy between the thirty-second and the fortieth week. Early delivery results in fewer stillbirths but more neonatal deaths due to prematurity, and later delivery reverses this (table 4). The thirty-seventh week is the crossing point for the rising stillbirth curve and the declining neonatal death curve.[25, 32, 33] Delivery prior to the thirty-seventh week is justified in mothers with evidence of progressive renal disease. Delivery after the thirty-seventh week should be reserved for women with mild uncomplicated diabetes and small babies. Because of the difficulty in determining the chronologic onset of pregnancy, final judgment in each case should depend upon a complete evaluation during the last 2 months of pregnancy.

TABLE 4: Time of Delivery and Fetal Survival

Week of Gestation	Deliveries	Stillborn		Neonatal Deaths		Fetal Loss	
		No.	Per cent	No.	Per cent	No.	Per cent
28–34	13	4	31	2	15	6	46
35–37	47	6	13	3	6	9	19
38–40	32	4	13	0	0	4	13
41–	7	2	29	0	0	2	29

There were 8 infants weighing more than 10 pounds, and 3 of these (38 per cent) were stillborn. There were 15 losses (32 per cent) in 47 infants weighing less than 6 pounds. Of the 50 infants weighing between 6 and 8 lbs. there were only 10 fetal deaths (20 per cent). An effort should therefore be made to deliver the baby after it weighs 6 lbs. but before it weighs 8 lbs.

Method of Delivery

The uncritical evaluation of the results of cesarean section has led some authors to recommend that this be the standard method of delivery in most diabetic patients.[4, 5, 8] When vaginal deliveries that are associated with known intra-uterine fetal deaths are eliminated it is found that the results for the 2 methods are similar. Crenshaw et al[12] use cesarean section only when there is a mechanical reason. They report a fetal loss comparable with that obtained by those who do routine cesarean sections. Our results show 12 per cent fetal loss with cesarean section, 20 per cent after induction, and 33 per cent after spontaneous delivery. This rate of 17 deaths in 58 vaginal deliveries is unduly high because it includes the 6 fetal deaths in the 13 who delivered spontaneously before the thirty-fifth week and also 7 fetal deaths prior to the proposed time of operative delivery. If these 20 pregnancies are eliminated from the total of 58 vaginal deliveries, there remain 38 patients who had vaginal delivery after the thirty-fourth week and a viable child at the onset of labor; the mortality becomes 11 per cent and compares well with that obtained by cesarean section. Induction of labor with amniotomy and intravenous oxytocin or intramuscular sparteine sulfate was attempted 18 times. Three inductions were unsuccessful, and a cesarean section became necessary. One large postmature infant died as the result of a traumatic vaginal delivery.

Abnormal Presentations

Abnormal presentation was recorded in 10 of the 96 deliveries after the twenty-eighth week. Seven of these infants were stillborn and 4 were dead at the onset of labor. In 1 the breech presentation could be related to the large size of the infant. In another the small size of the infant may have been a factor. The 1 set of triplets was complicated by 2 breech presentations.

Complications of Deliveries

Vaginal delivery was complicated by shoulder dystocia in 3 cases; in 2 of these the infants were stillborn. Earlier delivery was indicated in 2 cases. This would have resulted in smaller babies, and possibly 1 death might have been prevented. One infant weighing 10 pounds had a fractured clavicle after an apparently normal delivery.

Anesthesia

Because of the respiratory difficulties of babies born to diabetic mothers it is usually considered desirable to use conduction anesthesia rather than inhalation anesthesia.[34] Fetal loss after spinal, caudal and local anesthesia was 15 per cent as compared with 31 per cent after general anesthesia. However, these figures are misleading because general anesthesia was used in 14 of the 16 pregnancies in which the fetus was already dead at the time of delivery. Therefore, there is no advantage of conduction anesthesia when compared with good general anesthesia.

TABLE 5: Pregnant Women Treated with Oral Hypoglycemic Agents

Mother				Treatment			Delivery			Baby	
Age	Duration diabetes (months)	Class	Obesity	Drug	Dose	Duration (weeks)	Week	Method	Anesthetic	Weight (lbs. oz.)	Condition
34	10	B	0	Tol.*	3.0	38	38	Vag.	General	8-0	Good
32	14	B	0	Tol.	3.0	37	37	Sect.	Spinal	7-8	Good
40	12	B	2+	Chl.†	0.5	15	43	Vag.	General	10-4	Stillborn
23	2	B	3+	Tol.	1.5	2	36	Sect.	Spinal	8-8	Good
24	3	B	3+	Tol.	3.0	2	37	Sect.	Spinal	6-4	Good
27	4	B	2+	Tol.	2.0	2	37	Vag.	Block	6-0	Neonatal
37	16	B	2+	Tol.	3.0	10	39	Vag.	General	9-15	Good
37	12	B	3+	Chl.	.5	13	36	Sect.	General	8-6	Good
34	60	B	3+	Tol.	2.0	13	37	Vag.	General	7-13	Good
40	12	B	1+	Tol.	0.5	4	34	Vag.	General	7-8	Good
28	24	B	3+	Tol.	1.0	13	39	Sect.	Spinal	10-0	Good

* Tolbutamide

† Chlorpropamide

Oral Therapy for Diabetes

There were 11 patients in this series who received either tolbutamide,* chlorpropamide,† or phenformin‡ at some time during the pregnancy (table 5). Two were taking tolbutamide when they became pregnant and were controlled with this during the entire normal pregnancy. The daily dose of tolbutamide was gradually increased from 1.0 to 3.0 Gm. during these pregnancies. One woman required the addition of 75 mg. of phenformin each day in the last month. These 2 women were 32 and 34 years old and had mild diabetes of recent onset. Both have since become secondary failures to tolbutamide and are being treated with insulin. Both of the children were healthy.

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* Orinase® (Upjohn)

† Diabinese® (Pfizer Laboratories)

‡ DBI® (U. S. Vitamin Corporation)

Two women started on tolbutamide in the second trimester maintained good diabetic control and had normal deliveries. One of the 2 women started on chlorpropamide during the second trimester became a secondary failure in the last month, and treatment was changed to insulin. The other chlorpropamide-treated patient had good diabetic control but became careless about returning for prenatal visits. She delivered a 10¼-lb. stillborn infant in the forty-third week of pregnancy. Severe obesity had made it impossible to estimate accurately the size of the fetus.

There were 5 women who were started on tolbutamide during the last trimester of pregnancy. Four of these maintained good control and were delivered of healthy infants. One had inadequate control, and after 2 weeks treatment was changed to insulin. She had a normal vaginal delivery, but the baby died of hyaline membrane disease within 48 hours.

Six of these patients have been previously reported in a series of 13 women treated with oral hypoglycemic drugs during pregnancy.[1] The 7 women included in that paper but not in this were not delivered at Georgetown University Hospital. Four ended in stillbirths.

Not enough patients have been treated with oral hypoglycemic drugs during pregnancy to permit the conclusion that they should not be used. Our data indicate no harm in using these drugs in the patient who maintains good diabetic control and follows the other rules of good obstetric care for pregnant diabetics. Sulfonylurea drugs are usually ineffective in patients with the onset of diabetes before the age of 40 years and in patients who require more than 30 units of insulin per day. The insulin requirement usually increases by 20 to 50 units during pregnancy. Some women who require no insulin when not pregnant need it during the last trimester. Thus, the natural history of diabetes in pregnancy explains the findings that the dose of oral drugs had to be increased in all 11 patients in this series, that the treatment became ineffective in 2, and that only 2 required treatment prior to pregnancy.

None of the children of these 11 women had congenital abnormalities in spite of the teratogenic effects that have been reported in animals from massive doses of tolbutamide.[35] Both of the fetal deaths occurred in women who were grossly obese and did not follow the prescribed diet. One of these deaths might have been prevented by a more accurate determination of the duration of pregnancy and by following a firm rule that diabetic patients be delivered during the thirty-seventh week.

There is no evidence that the use of the oral agents has had a deleterious effect upon the outcome of the pregnancy in any of the 18 patients that the senior author has either treated or reviewed in detail. The sulfonylurea drugs have been used by Dolger et al,[36] Jackson et al,[37] and Ghanem[38] with results that appear similar to ours when their data are corrected for lethal factors not related to the oral agents.

Insulin

Seventy of the patients were receiving insulin at the time of delivery. The fetal loss of 24 (34 per cent) in this group is divided into 13 stillborn (18 per cent), 5 neonatal deaths (7 per cent), and 6 spontaneous abortions (9 per cent). In the 32 patients not treated with insulin there were 3 stillbirths and 1 neonatal death with a fetal mortality of 13 per cent. It may be concluded that the patients with severe diabetes require insulin and are subject to more complications.

The insulin requirements gradually increased during the pregnancy in most patients.[39] The 50 patients taking 60 units or less each day had 18 (36 per cent) fetal deaths as compared with only 2 fetal deaths (18 per cent) in the 11 patients who received more than 60 units each day. Some of those on the smaller doses probably should have had a greater increase in their insulin dose as the pregnancy progressed. Some physicians tend to be slow in meeting the increasing insulin requirements during pregnancy.

Diet

All patients were given a diabetic diet based on the food exchange system. The most commonly prescribed diet contained 180 Gm. of carbohydrate, 120 Gm. of protein and 60 Gm. of fat, to yield 1,800 calories. In most patients the carbohydrate and fat were increased as the pregnancy progressed. In 23 patients it was possible to control the diabetes by diet alone. This group of very mild diabetics had 2 stillbirths and 1 neonatal death for a fetal loss of 13 per cent.

Hormones

No patient was given the large doses of intramuscular progesterone and diethylstilbestrol advocated by White.[4] Seven patients were given oral diethylstilbestrol in increasing doses after the method of Smith and Smith.[40] These pregnancies resulted in 1 immature infant at 26 weeks, 2 stillbirths, and 4 viable infants. These same women had 2 live babies in 6 pregnancies without hormones. It therefore seems that the hormone might have had a favorable effect upon the outcome of pregnancy in these patients, but the series is too small to permit a firm conclusion.

Previous Pregnancies

Fourteen of the 72 patients in this series were primipara and had 3 (21 per cent) fetal deaths. The other 58 women had had 143 pregnancies before diabetes was diagnosed, with a fetal loss of 21 (15 per cent), and 60 pregnancies after diabetes was diagnosed, with a fetal loss of 34 (57 per cent). There was a total loss of 55 (27 per cent) in the 203 previous pregnancies in these women. These data confirm the high fetal mortality previously reported in prediabetic pregnancies[40] and also suggest that the mortality is reduced when diabetic women receive more intensive prenatal care.

Summary

One hundred and five deliveries in 72 diabetic patients have been reviewed. There was 1 maternal death in a patient who had far advanced renal disease when she became pregnant. The overall results included: spontaneous abortions 6 per cent, stillbirths 15 per cent, neonatal deaths 6 per cent, gross fetal loss 27 per cent, and post-28 weeks' fetal loss 22 per cent. The complications included: toxemia in 24 with 25 per cent fetal loss, polyhydramnios in 18 with 50 per cent fetal loss, and acidosis in 11 with 63 per cent fetal loss.

The method of delivery was by cesarean section in 41 per cent with 12 per cent fetal loss, induced delivery in 15 per cent with 20 per cent fetal loss, and spontaneous labor in 43 per cent with 33 per cent fetal loss. Corrected fetal loss in 38 vaginal deliveries was 11 per cent.

There was 46 per cent fetal loss in 13 deliveries during the twenty-eighth to thirty-fourth week, 19 per cent loss in 47 deliveries during the thirty-fifth to thirty-seventh week, 13 per cent loss in 32 deliveries during the thirty-eighth to fortieth week, and 29 per cent loss in 7 deliveries after the fortieth week.

Congenital abnormalities occurred in 6 per cent.

Abnormal presentations occurred in 9 per cent, and there were mechanical complications of delivery in 4 per cent.

Fetal loss was 15 per cent in 54 patients who had conduction type anesthesia and 31 per cent in 45 who had general anesthesia. However, there was no fetal loss in the 31 women who had a live fetus at the onset of labor and were given general anesthesia.

Fetal loss was 15 per cent in 143 prediabetic pregnancies and 57 per cent in 34 previous deliveries elsewhere after the onset of diabetes.

Fetal loss was 20 per cent in 50 infants weighing between 6 and 8 lbs. but was 36 per cent in those larger and smaller.

Fetal loss was 18 per cent in 11 patients who received oral diabetic therapy.

Conclusions

The excessive fetal loss in pregnant diabetics can be reduced by the following:

1. Medical: Meticulous diabetic control with frequent visits, urine and blood sugar tests, and the avoidance of acidosis. Sulfonylurea drugs are safe when there is adequate control. Fluid retention and urinary-tract infections should be looked for and treated early and intensively. Obesity should be avoided.
2. Obstetric: Delivery in the thirty-seventh week is best. Induced deliveries are safe when usual obstetric requirements are met and satisfactory progress occurs. Cesarean section should be done promptly if induction is ineffective.
3. Hormones: There is a suggestion that diethylstilbestrol may help in selected patients.
4. Anesthesia: There is no apparent difference in the safety of conduction anesthesia and general anesthesia.
5. Pediatric: All of the neonatal deaths were caused by hyaline membrane disease and atelectasis. Premature delivery is a factor in these complications. Skillful treatment of the infant helps him to stay alive until the lungs clear.

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AMA-ERF Loan Guarantee Program

The AMA-ERF Loan Guarantee Program experienced its second successive year of increased loan activity in 1964.

Loans to medical students, interns and residents all were in greater number in 1964, but the largest gain was registered by residents—nearly a third more loans were received by this group of trainees in 1964 than in 1963.

TABLE 1: Comparison of AMA-ERF Loan Program in the District of Columbia for 1964 and 1963

	1964		1963	
	No. Loans	Principal Amount	No. Loans	Principal Amount
Total for D. C. Medical Schools and Hospitals	337	$404,700	332	$394,200
Medical Schools:				
Georgetown	51	59,500	52	65,400
George Washington	104	106,300	105	95,400
Howard	97	129,800	104	141,600

Among medical students, there was a slight decline in the number of loans to freshmen and sophomores, but this was more than offset by increases in the 2 upper classes. Overall, the proportion of loans during the year going to medical students fell to 58 per cent from the 1963 figure of 62 per cent. Meanwhile, the proportion going to residents was up from 24 per cent to 28 per cent. The proportion to interns remained substantially the same.

Once again, medical trainees in California borrowed more frequently than those in any other state. Following California in number of loans in 1964 were Texas, Tennessee, Pennsylvania, and the District of Columbia, in that order. Table 1 shows the amount of funds loaned to medical trainees in the District of Columbia.

Use of Methylprednisolone in Intracranial Surgery

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One of the major problems often faced by clinicians concerned with patients harboring intracranial disease is that of elevated intracranial pressure. There have been many methods and drugs developed to combat this phenomenon; this study is concerned with a relatively recent concept—the use of corticosteroids.

Methods of controlling intracranial pressure have been directed at reducing the volume of intracranial vascular space, cerebrospinal (CSF) space, or brain parenchymal space. Such methods have included the following[1]: restriction of fluid intake, stimulation of diuresis, elevation of the head, CSF drainage, maintenance of adequate brain oxygenation and perfusion, correction of any electrolyte and protein imbalance, attention to adequate functioning of body organ systems, avoidance of coughing and straining, mechanical operative decompression, hemostasis, limitation of iatrogenic physical and physiologic brain trauma, controlled vascular hypotension (e.g., trimethaphan camphorsulfonate), use of intravascular agents of high osmolarity (e.g., urea, mannitol), hypothermia, controlled passive hyperventilation, tracheostomy, cervical sympathetic block, caffeine, proteolytic enzymes, antihistamines, anticholinergic agents (such as atropine), carbonic anhydrase inhibitors (e.g., acetazolamide, ethoxzolamide), carbon dioxide buffers (e.g., THAM), and glucocorticosteroids.

Clinical Study

The case records of 60 patients who received methylprednisolone as Solu-Medrol® to control intracranial pressure during the 2-year period from July 1962 through June 1964 were reviewed at the Mt. Alto Veterans Administration Hospital, District of Columbia General Hospital, and the George Washington University Hospital in Washington, D. C. Every neurosurgical patient found to have been given methylprednisolone immediately following brain surgery for neoplasm, hematoma, or aneurysm during this period was included in the study. About 40 additional patients who were administered other steroids, such as hydrocortisone, prednisolone, and dexamethasone, were encountered but were excluded from the study. Table 1 summarizes the cases receiving methylprednisolone.

TABLE 1: Cases of Intracranial Surgery in Which Methylprednisolone Was Used Postoperatively

Intracranial lesions	Number	No. of Deaths*	Mortality Rate (Per cent)
Neoplasm	28	3	11
Hematoma (acute or subacute, intracerebral or subdural)	16	6	38
Chronic subdural hematoma	4	1	25
Aneurysm	12	4	33
TOTAL	60	14	23

* Any patient who died within 1 month of operation was considered a surgical mortality.

A rough comparison can be made with the following group of patients at the same hospitals who did not receive any steroid therapy following intracranial surgery. This is an unselected group from the same hospitals during the same time period and also during a previous year (table 2).

TABLE 2: Patients with Intracranial Surgery Receiving No Steroids Postoperatively

Intracranial lesions	Number	No. of Deaths	Mortality Rate (Per cent)
Neoplasm	37	12	32
Hematoma (acute or subacute, intracranial or subdural)	40	18	45
Chronic subdural hematoma	22	6	27
Aneurysm	11	1	9
TOTAL	110	37	34

It is difficult to draw any conclusions from these tables because there is no real control series. One never knows whether a given patient would have done worse or better if he had not received steroids following brain surgery. Upon reviewing the charts it is difficult to be sure how much of a part was played by increased intracranial pressure in a given patient's poor postoperative course, since the typical signs of lethargy, slow pulse, elevated systolic blood pressure, respiratory irregularity, and other neurologic signs can be confused or masked by the effects of fever, bloody cerebrospinal fluid, cerebrovascular insufficiency (spasm, occlusion), and operative interruption of important CNS structures. Often the steroids were used only in the more severe cases or as a last resort by some physicians; this makes comparison difficult with patients not receiving steroids. Sometimes too little of the drug was given too late. In spite of this the overall mortality rate was about 23 per cent when methylprednisolone was used and about 34 per cent when no steroid was used. This study revealed no significant difference in the cases of hematoma or aneurysm (series too small). There was an appreciable difference in the cases of brain tumor (neoplasm): 11 per cent mortality in the 28 patients who received methylprednisolone and 32 per cent mortality in the 37 patients who received no steroids. Although these figures at first glance may appear statistically significant, they really are not comparable because of the multitude of other problems attending surgical procedures, the variation in surgical technique and anesthesia, and variation in individual patient responses. A much larger double-blind series is needed to average out this "noise." Nevertheless, it is my opinion that patients who received adequate doses of methylprednisolone generally had a postoperative course more benign than was to have been expected.

Clinical studies underway by neurosurgeons indicate that cortisone and hydrocortisone,[2] prednisolone,[3] methylprednisolone,[4] and dexamethasone[5] at initial parental doses of 100–200 mg., 50 mg., 40 mg., and 10 mg. respectively are especially effective in reducing elevated intracranial pressure in cases of brain tumor and brain surgery. Subsequent doses of about ½ the initial strength are given at intervals of 3 to 12 hours as the dosages are gradually reduced. Although the actual dosages of methylprednisolone in this series varied somewhat, I have found the following schedule of value:

Preoperatively:

20 mg. (0.5 c.c.) I.M. q.6 h. (q.3 h. if intracranial hypertension is present)

During surgery:

40–20 mg. (1.0 c.c.–0.5 c.c.) I.V. q.h.

Postoperatively:

20 mg. (0.5 c.c.) I.M. q. 3 h. for 24 hrs., then
16 mg. (0.4 c.c.) I.M. q. 3 h. for 24 hrs., then
12 mg. (0.3 c.c.) I.M. q. 3 h. for 24 hrs., then
8 mg. (0.2 c.c.) I.M. q. 3 h. for 24 hrs., then
4 mg. (0.1 c.c.) I.M. q. 3 h. for 24 hrs., then
4 mg. (0.1 c.c.) I.M. q. 6 h. for 24 hrs., then
4 mg. (0.1 c.c.) I.M. q. 12 h. for 24 hrs., then
Discontinue methylprednisolone.

Large frequent doses are used, since animal experiments indicate that, if the half-life of methylprednisolone is 1½ hours, an average adult human may require up to 100 mg. per hour for good protection (extrapolating from the dosage needed to protect dogs from severe cerebral edema during vegetable oil embolization).[6] The dosage is reduced gradually not only to maintain relatively good protection during the first days of postoperative brain edema but also to avoid sudden relative steroid insufficiency which would bring about a rebound in intracranial pressure. It is most important to reinstitute large frequent dosages if the patient should require another traumatic procedure during the postoperative period or if the brain begins to swell (intracranial bleeding having been ruled out) as the steroid dosage is reduced. Patients with malignant tumors (with or without brain surgery) can be carried on about 4 mg. of methylprednisolone as oral Medrol® q.i.d. for many months to keep the patient comfortable. Similar or higher doses can be instituted during radiation therapy of brain tumors if brain swelling becomes a problem.

The following postoperative complications have been encountered in this series of patients: superficial wound infection—2, septicemia—1, pyuria (from catheterizations)—9, pneumonia—4, cholecystitis—1, cerebral thrombosis (aneurysm)—1, pulmonary embolism—2, seizures—2, gastritis—1, bleeding peptic ulcer—2. None was attributed to the steroid except the gastritis (cleared with milk and cream) and the peptic ulcer. There was a similar peptic ulcer in a patient on hydrocortisone. All 3 of these patients with peptic ulcer died from gastrointestinal hemorrhage, but each had a definite past history of peptic ulceration, which is an absolute contraindication to the use of any adrenocortical steroids. This drug also should not be used in a patient with arrested tuberculosis or any other condition normally contraindicating steroid therapy. The incidence of infection (wound, pulmonary, urinary tract) was no more frequent than one finds following similar surgical procedures on the brain without the use of steroids. However, while an advantage of these steroids is to keep the patient's temperature down, one should be on the alert for possible infection, especially in the urine, lungs, wound, and meninges. One of the patients on hydrocortisone (craniopharyngioma) varied daily between excessive sensitivity to the steroid (confusion and high serum sodium) and poor response to the steroid (confusion, shock, and low serum sodium) while water balance was under good control; the reason, septicemia, was discovered too late.

Fifty of the patients on methylprednisolone had their postoperative electrolytes recorded. There were no instances of elevated sodium or chloride serum concentration or excessively low potassium. Interestingly enough, there were 8 cases (15 per cent) of low serum sodium concentration between 126 and 132 mEq/l. Generally the patients received ½ liter of 5 per cent dextrose in water every 8 hours during the first postoperative days. Electrolytes were supplemented only if indicated by chemical studies.

Discussion

It must be emphasized that control of intracranial pressure involves a delicate balance among many factors affecting the hydrostatic and osmotic pressure relationships across capillary and brain-cell membranes.[1] It appears that brain-cell injury and acidosis result in accumulation of ions, proteins, and other solutes which have been released from their normally bound state in brain-cell proteolipid membranes. Injury to the blood-brain barrier further enhances passage of such solutes from the capillary into the brain parenchyma and cerebrospinal fluid. These substances then become osmotically effective and draw in water, causing overhydration of the central nervous system. The use of urea[7-11] and mannitol[12, 13] to increase the intravascular osmotic pressure has been worthwhile; however, not only does this method not correct the primary problem of increased osmotic activity in the brain but also rebound intracranial hypertension has been an occasional problem. Reduction of vascular hydrostatic pressure by controlled vascular hypotension is used,[14-17] but the possibility of brain injury from inadequate perfusion exists, and again this does not deal with the primary problem. The use of hypothermia has been explored,[18-26] but its value as a routine measure in brain surgery to reduce brain metabolism, cerebral blood flow, and brain size is still debated. Controlled passive hyperventilation[27-33] to reduce brain CO_2 pressure and acidity (as well as the intracranial vascular volume and hydrostatic pressure) has been a major advance in more directly attacking one of the avenues of development of increased intracranial pressure. The value of tracheostomy when needed is partly based on the same physiologic concepts.[1, 30, 34, 35]

The value of glucocorticosteroids for reducing brain swelling and edema in cases of brain tumor and brain surgery is gaining recognition.[2,3, 5, 36, 37, 38] Their use in neurologic diseases has been reviewed by Glaser.[39] Other authors have mentioned that these steroids seem to reduce intracranial pressure in cases of head injuries,[40] tuberculous meningitis,[41, 42] stroke,[43, 44] metastatic breast carcinoma to the brain,[45] and pseudotumor cerebri.[46] Several neurosurgeons have thought that steroid replacement therapy in cases of parasellar tumor surgery also served to help control intracranial pressure postoperatively.[47, 48, 49]

Woodbury[50] made an extensive review on the relation between the adrenal cortex and the central nervous system. Changes in intracranial pressure can activate and depress the adrenal cortex[51]; most likely this occurs through deformation of the pituitary stalk and circulation as the intracranial pressure rises.[52, 53] The limbic-hypothalamic-hypophyseal-adrenal axis plays an important role in adrenocortical function.[54, 55] On the other hand, numerous animal experiments indicate that the adrenal cortex also has direct influence on brain-cell physiology (aside from its role in suppressing the pituitary gland). Adrenalectomy results in reduced cerebral blood flow and oxygen consumption and causes EEG abnormalities corrected by cortisone but not desoxycorticosterone (DOCA).[56, 57] Cortisone lowers and DOCA raises the electroshock and seizure stimulation threshold of the brain.[58-61] Injury-induced brain edema or swelling in animals was reduced by using glucocorticosteroids.[6, 62-67] The marked swelling of the in vitro brain of an adrenalectomized rat is avoided by adding cortisone to the isotonic saline solution containing this brain.[68, 69, 70] On the other hand, cases of papilledema and increased intracranial pressure in Addison's disease[71-74] and during steroid withdrawal[75, 76] have been documented.

Although it has been said that steroids reduce brain edema by their stabilizing effect on brain capillary walls,[77] steroids also seem to have a unique action on brain cells. Extracellular osmotic pressure and intracellular metabolism serve to determine cell size by regulating water exchange across the cell membrane.[78] It is this brain-cell membrane which appears to be crucial not only in allowing passage of solutes but also in determining the amount of ions available in solution to draw in water.[1] For example, hypercapnia and CNS acidosis tend to drive more H^+ ions onto the proteolipid cell membrane in exchange for K^+ and Na^+. This may not only make the cell membrane more impermeable to the passage of solutes, nutrients, and catabolic products (increase in surface tension as cell membrane becomes less like a soap and more like a lipid) but also increases the osmotic pressure in the brain tissue as ions leave their bound state and go into solution inside and outside of the cell wall. Loss of potassium from injured brain cells has been demonstrated.[79-82] This normally bound or nonexchangeable K^+ may play an important role in intracranial pressure.

DOCA (and probably aldosterone by inference) raises serum Na^+ and lowers serum K^+ concentrations and increases the rate of brain Na^+ uptake from the blood but has no effect on the concentration of CNS K^+.[83-87] On the other hand, the response of serum Na^+ and K^+ to cortisone is much less, but this drug effects a definite change in brain electrolytes. Cortisone slows down brain sodium uptake from blood (greater barrier).[87] This drug seems to have an effect on brain potassium such that the total concentration is not changed but the ratio of freely exchangeable or unbound K^+ to K^+ bound to the cell is apparently decreased under the experimental conditions of Katzman and Leiderman.[86, 88] Cortisone (not DOCA) returned to normal the elevated ratio of freely exchangeable K^+ to nonexchangeable K^+ in the brain after this ratio had been increased by adrenalectomy. There has been discussion as to whether the nonexchangeable K^+ is the same bound K^+ which cannot be washed or filtered out of the in vitro brain.[50, 89-94] This bound K^+ seems to be tied to cell membranes or organelles (many of which now appear to be intricate infoldings of the cell wall[95]).

The steroid molecule is an important molecule in cell membranes[96] and is found in human nerve tissues.[97] Cortisol is fat-soluble and enters the CNS readily (the CSF/plasma ratio is 0.2, reflecting the nearly 20 per cent of the cortisol which is not protein-bound in the blood).[98, 99] One wonders whether the glucocorticosteroids help to maintain the normal osmotic activity of the brain fluids by enhancing the brain-cell proteolipid binding of monovalent ions such as K^+ (just as hypocapnia may encourage the brain cell membrane binding of K^+ and Na^+) so that they are not free to draw in water.[1]

Summary

A review of 60 cases of patients receiving methylprednisolone (Solu-Medrol) to help control intracranial pressure after brain surgery has been presented. Because of the tendency to use this drug often as a last resort on patients who are deteriorating and to give too little too late, comparisons with patients who have not received this drug are difficult. Nevertheless, the rate of postsurgery mortality (as defined under the clinical studies) in patients harboring brain neoplasms was 11 per cent for 28 patients receiving methylprednisolone and 32 per cent for 37 patients receiving no steroids. This study revealed no essential difference between the survival of patients with intracranial aneurysm or hematoma who received this drug and those who did not receive this drug; however, the number of these patients is too small and diversified to adequately determine any conclusions.

Two patients died as a direct result of upper gastrointestinal hemorrhage from peptic ulcer induced by this steroid; however, both patients had a previous history of peptic ulcer—an absolute contraindication to use of any adrenocortical steroid. There were no high serum sodium values; there was a 15 per cent incidence of abnormally low serum sodium values during the first few postoperative days.

A recommended dosage schedule has been given. The relationship of brain physiology to the cortisone compounds has been discussed.

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Unclassified Acid-fast Bacilli

Report of Three Cases: Isolations from the Wards of a General Hospital*

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EARLY RECORDINGS of unusual acid-fast bacilli associated with disease in humans appeared in the mid-thirties by Branch,[1] Pinner,[2, 3] and Steenken.[4] Within the last decade interest has been awakened in the ability of acid-fast bacilli other than *M. tuberculosis* and *M. bovis* to produce human disease, and currently case reports flood the literature.[5-15] Unfortunately, the true incidence of the disease produced by these organisms is unknown because of the failure of some authors to differentiate patients in whom such organisms are repeatedly isolated from those patients whose organisms are isolated only once or are found concomitantly with disease due to some other cause.

Two distinct schools of thought have evolved regarding the origin of acid-fast bacilli. That of Xalabarder,[16] who proposes a unitary theory of mycobacterial origin, is that they are phylogenetically 1 organism. The opposing, more widely accepted theory is that of Runyon.[17] He believes that acid-fast bacilli are distinct entities which are species-specific and pose special clinical and laboratory problems.

These unusual mycobacteria have been grouped in accordance with their ability to become colored when exposed to light, by growth characteristics, by certain biochemical tests,[17-20] by their inability to cause progressive disease in guinea pigs, and by bacteriophage typing. Tables 1 and 2 in part give a basis for the classification.

The organisms have been called various names, such as atypical acid-fast bacilli and anonymous mycobacteria, but the preferred name is "unclassified acid-fast bacilli," [21] suggesting that these organisms are not anonymous or atypical but have defied attempts at adequate classification. The disease they produce is called "mycobacteriosis."

TABLE 1: Classification of Unclassified Acid-fast Bacilli (modified from Runyon[17])

Group I, Photochromogens	*M. kansasii;* yellow bacillus. Young cultures rapidly acquire pigmentation, yellow-orange if grown in light
Group II. Scotochromogens	Yellow-orange from onset of growth in dark
Group III. Nonphotochromogens	Battey bacilli—pigment slight or absent
Type A:	Buff-colored
Type B:	Pale orange
Group IV. Rapid growers	*M. fortuitum;* Nocardia species grows within 2-3 days at room temperature

Materials and Methods

We analyzed all cases in which unclassified acid-fast bacilli were isolated in Freedmen's Hospital from 1956 through 1962. The year 1956 marked the first year that atypical appearing cultures became recognizable at Freedmen's Hospital. The patient population is predominantly Negro.

All specimens submitted to the bacteriology laboratory for the isolation of acid-fast bacilli were inoculated on Löwenstein-Jensen media and incubated at 37° C. All cultures appearing dif-

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* Presented in part, April 29, 1963, during the 52nd Annual Meeting of the International Academy of Pathology, held in Cincinnati, Ohio, April 26-May 1, 1963.

ferent from *M. tuberculosis* were subcultured and subsequently classified into one of Runyon's 4 groups^{17} according to photochromogenicity and growth characteristics. A further attempt at classification and verification was made by means of the niacin, catalase and peroxidase biochemical tests.$^{19, 20}$ Patients were divided into 3 categories in order to assess the importance of unclassified acid-fast bacilli in the causation of disease in this hospital as follows: (1) pulmonary disease due to unclassified acid-fast bacilli, (2) pulmonary disease from which both *M. tuberculosis* and one of the unclassified acid-fast bacilli were isolated, and (3) patients with unrelated illness from whom unclassified acid-fast organisms were isolated.

TABLE 2: Some Biochemical Tests for Differentiating *M. tuberculosis* from Unclassified Acid-fast Bacilli$^{18, 19, 20}$

Test	*M. tuberculosis*	Unclassified Acid-fast Bacilli
Catalase	−	+
Thioglycollate	−	+
Peroxidase	+	−
Neutral red cytochemical	+	−
Serpentine cord	+	−
Niacin	+	−
Neotetrazolium inhibition	+	−

Results

Although organisms were isolated from a total of 252 hospitalized patients, only 3 of these had disease which we were able to attribute to the unclassified acid-fast organisms. Nineteen patients with true pulmonary tuberculosis also had unclassified organisms isolated. Two hundred and thirty patients with unrelated illness had isolations from sputa, urine, and other body secretions, such as cerebrospinal fluid and ascitic fluid. The urine was a common source of growth. Isolations from this source were made in 33 patients. Twenty-six of this group were females. A summary of these data is shown in table 3.

TABLE 3: Patient Category and Group of Organism Isolated from Each and Number of Patients

Patient Category	Group				No. of Patients
	I	II	III	IV	
Pulmonary disease due to unclassified AFB	1	0	0	2	3
Pulmonary disease from which both *M. tuberculosis* and unclassified AFB were isolated	0	19	0	0	19
Isolations of unclassified AFB from patients with unrelated illnesses	50	110	25	45	230
TOTAL					252

Report of Cases

The following are case reports of 3 patients whose pulmonary disease, we believe, was attributable to unclassified acid-fast bacilli.

Case 1. R. H., a 75-year-old retired Negro truck driver, was admitted to the hospital in September 1962 after a routine chest X-ray film was found to contain an infiltrate in the right upper lobe with multiple cavitation (figure 1). He had had a chronic cough productive of mucoid sputum, night sweats, and weight loss. He denied tuberculosis contact. He was being treated in the Medical Clinic for diabetes and arteriosclerotic heart disease. An intermediate strength PPD was 15 mm., and his histoplasmin skin test was negative. Diagnostic bronchoscopy in October was negative for endobronchial disease. Unclassified mycobacteria which were not *M. tuberculosis* were cultured from the sputum repeatedly. Initially the organisms were resistant to INH®, 10 μg. per ml., streptomycin, 100 μg. per ml., and PAS, 100 μg. per ml. Subculture of these organisms and further tests revealed them to be the photochromogen, *M. kansasii*, peroxidase-, niacin- and catalase-negative. Tomograms revealed multiple cavitation in the posterior segment of the right upper lobe. Treatment with high-dose isoniazid, vitamin B_6, and streptomycin was begun. Later, streptomycin was replaced with PAS. The pa-

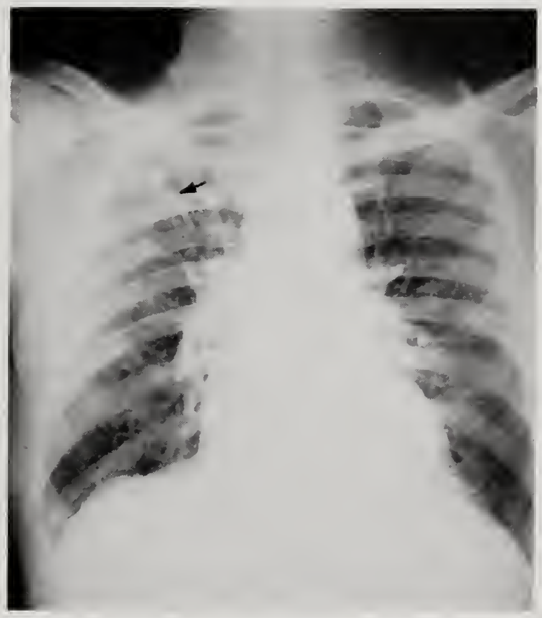

FIG. 1. Infiltrate in right upper lobe with multiple cavitary lesions (case 1).

tient refused surgery. Although his sputum has converted, his X-ray films have remained unchanged, with open cavities at the time of writing.

Case 2. L. A., a 24-year-old Negro college student, was admitted in October 1962 with low-grade fever of 100.2°F. A chest X-ray film disclosed "coin lesions" in the right middle and lower lobes (figure 2).

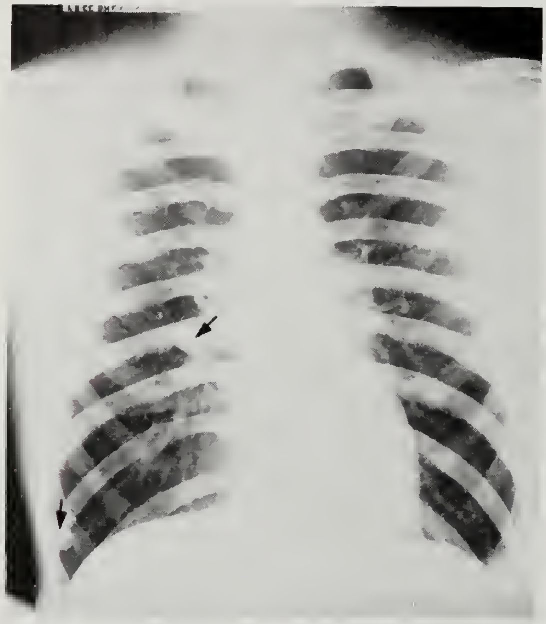

FIG. 2. Rounded areas of increased density ("coin lesions") in the right middle and lower lobes (case 2).

A histoplasmin skin test read 15 mm., and intermediate strength PPD was negative on several occasions. A complement-fixation test for histoplasmosis was negative. Sputum cultures were positive for atypical acid-fast bacilli 2 days after admission. Subculture revealed the organism to be a rapid grower, *M. fortuitum*, which was niacin-, catalase- and peroxidase-negative. Ventilatory function was adequate for surgery. A middle and right lower lobectomy were performed in November 1962. Histologic examination of the resected specimen revealed a "caseous granuloma," and the same organism was recovered from the resected surgical specimen as was cultured from the sputum. Stains and cultures for fungus were negative. Recovery was uneventful following surgery.

Case 3. J. W., a 26-year-old Negro student, was admitted in January 1962 with a diagnosis of sarcoidosis on the basis of a chest X-ray film with characteristic bilateral hilar adenopathy (figure 3). He did not have pulmonary symptoms but abdominal pains suggestive of peptic ulcer and a papulosquamous skin eruption on the trunk. Serum calcium and proteins were within normal limits. Both intermediate strength PPD and histoplasmin skin tests were negative. Gastrointestinal X-ray examination was negative. *M. fortuitum* was cultured from bronchial washings on several occasions which were niacin- and peroxidase-negative. Catalase was slightly positive.

In January 1962 a diagnostic bronchoscopy revealed changes compatible with chronic nonspecific bronchitis. A scalene node biopsy revealed noncaseating granuloma compatible with sarcoidosis. Skin biopsy revealed eczematoid dermatitis. The patient was discharged the same month without treatment. A chest X-ray film taken in September 1963 showed spontaneous regression of the hilar nodes.

Discussion

Of the 3 patients presented, 1 had pulmonary disease due to *M. kansasii*, a photochromogen, and the other 2 had pulmonary disease due to *M. fortuitum*, a Group IV rapid grower.

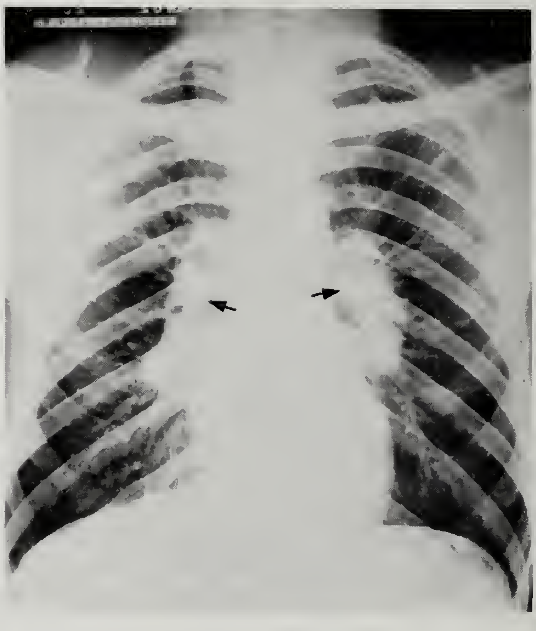

FIG. 3. Bilateral hilar adenopathy (case 3).

Disease due to *M. kansasii* is more prevalent in the Midwest and Texas in this country[17] and in England and The Netherlands abroad. Infections with all types of unclassified acid-fast bacilli are more prevalent in elderly white males than in Negroes.[5, 8, 10, 12, 13, 17] On the other hand, Hsu[22] indicated that prevalence of infection in Houston among Negro school children is higher than suspected. The patient in case 1, with disease due to *M. kansasii*, had symptoms indistinguishable from those produced by *M. tuberculosis*. His chest X-ray film showed cavitary disease of the fibrocaseous type. Some workers suggest that mycobacteriosis can be distinguished from tuberculosis on the basis of differences in the chest X-ray film as follows: Disease produced by unclassified acid-fast bacilli is said to have a greater proportion of cavities to infiltrate present and thin-walled cavities with strands.

Patient no. 1 had multiple cavitation which was better visualized in tomograms. He also had pretreatment drug resistance. The latter finding is in accord with reports of others.[17] Despite in vitro resistance, sputum conversion occurred after 9 months of therapy, but cavities failed to close. This is in part consistent with the reported persistence and indolence of mycobacteriosis despite adequate chemotherapy.[8, 10, 12] Diagnostic bronchoscopy performed during the patient's hospitalization was negative. By bronchoscopy some observers[11] report a greater amount of endobronchial disease in mycobacteriosis.

Patients in cases 2 and 3 had disease produced by unclassified acid-fast bacilli mistaken for histoplasmosis and sarcoidosis respectively. In case 2 positive sputum cultures, as well as positive cultures from the resected pathologic specimen for *M. fortuitum,* are confirmatory. In the presence of a negative complement-fixation test for histoplasmosis and failure to find *H. capsulatum* by smear or culture the microscopic appearance of the pathologic specimen, a caseous granuloma, cannot be distinguished from that caused by *M. tuberculosis.*[5] Recently Merckx,[23] using the electron microscope, has not been able to find any difference in experimental lesions produced by various acid-fast bacilli.

Patient no. 3 had a "sarcoid-like syndrome" produced by *M. fortuitum.* Nocardia were not found. Since the noncaseating granuloma is nonspecific, it may be produced by mycobacteria. Chapman[24] has demonstrated the existence of circulating antibodies in the sera of some patients with sarcoidosis. Inasmuch as the etiology of sarcoidosis remains unknown, the possibility that at least some cases of sarcoidosis may be caused by unclassified mycobacteria must not be overlooked. Runyon[17] stated that Hall isolated Nocardia-like organisms from a patient with sarcoidosis and cutaneous ulcers. The similarity between Hall's case and ours is noteworthy.

Two of our 3 cases of mycobacteriosis are caused by Group IV organisms, *M. fortuitum.* The frequency of isolation of members of this group is least numerous and sporadic.[17] We agree, however, that they may be independent pulmonary pathogens.

Group II organisms (scotochromogens) were seen in 19 patients who had true pulmonary tuberculosis. We confirm the fact that these organisms are rarely independent pathogens and are seen most commonly in association with other pulmonary disease. We suggest that Group II organisms are commensals.

We failed to find primary lung disease caused by Group III nonphotochromogens (Battey bacilli). These organisms cause pulmonary infections with greater frequency than the other groups[17] and predominate in the southeastern states. Since many Negroes migrate to the Washington, D. C. area from the southeastern states, we expected to find some Battey infections.

The organisms isolated from 230 patients with unrelated illness may have been saprophytes, since the body secretions were from organ systems free of clinical disease. The saprophytic nature of unclassified acid-fast bacilli has been proven by their isolation from samples of soil.[25] Since some of the organisms in the report were single isolations, they may have been contaminants.

On smear we noted that some of the atypical mycobacteria were larger than *M. tuberculosis.* The distinction has been made before.[26] We did not consider the observation consistent enough to be used as a differential point but believe that it deserves further study. The majority of isolations were made in the spring. This corresponds to the seasonal variation in detection by others.[13]

Patients with pulmonary disease due to unclassified acid-fast bacilli should be hospitalized and separated from the patient with classical *M. tuberculosis* in order to prevent superinfection by the latter. It is not necessary to separate these patients from other hospitalized patients since they are of such low virulence that no household contacts have been reported.[10, 12, 13, 15] Because of the indolent nature of the infection and poor results following chemotherapy alone we join others[8, 12, 17] and recommend high-dose isoniazid and B_6 with either of the other 2 major antituberculous drugs along with early resectional surgery. If contraindications to surgery exist, maximum benefit discharge is suggested. Skin tests with homologous antigens are now available. Because of their nonspecificity and cross-reactivity with heterologous antigens we do not recommend them for routine screening use until more work is done.

The controversy of origin of mycobacteria is of little practical importance. The fact remains that infection with unclassified acid-fast bacilli poses a problem in diagnosis and management for the clinician. Advanced knowledge of infection with these organisms is needed because it dictates a more vigorous approach to medical therapy, makes surgical resection mandatory, and justifies isolation from the patient with the more communicable human tuberculosis.

Although most workers make a point of the infrequency with which Negroes are infected with unclassified acid-fast bacilli, it occurs with sufficient frequency for the physician and bacteriologist to maintain their vigilance in dealing with a predominantly Negroid patient population.

Summary

Of 252 patients harboring unclassified acid-fast bacilli, 3 had pulmonary infection attributed to these organisms. In 1 patient disease was caused by *M. kansasii*, while in the other 2 it was caused by *M. fortuitum*. We found no instances of primary infection due to Battey bacilli.

Nineteen of the 252 patients with pulmonary tuberculosis also harbored scotochromogens. The remaining 240 patients with a variety of unrelated illnesses had unclassified acid-fast bacilli isolated from various body secretions. We believe these isolations are not clinically significant.

The importance of accurate, early diagnosis of disease caused by unclassified acid-fast bacilli is emphasized with respect to management of the patient with mycobacteriosis.

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Altered Glucose Tolerance of Hepatic Origin in Pulmonary Emphysema

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A GROUP OF PATIENTS with pulmonary emphysema were investigated with carbohydrate tests, and a high percentage of abnormal results were observed. Normally a glucose feeding is followed by hepatic glucose storage and peripheral-cell glucose uptake.[1] If either of these mechanisms is not adequately responsive to the induced hyperglycemia, an abnormal glucose tolerance test (GTT) may be registered. An attempt was made to distinguish these causes of exaggerated hyperglycemia by a study of serum phosphorus.

In a normal person hyperglycemia produces a fall in serum phosphorus. Phosphorus decline depends predominantly on peripheral cell uptake of glucose.[2] Inadequate amounts of circulating, effective insulin (diabetes mellitus) will prohibit significant peripheral uptake of glucose, and only minimal phosphorus decline is observed. In contrast, hyperglycemia consequent to liver disease is accompanied by the normal fall in phorphorus concentration.[3]

Materials and Methods

Twenty-five patients with historical, physical and laboratory evidence of pulmonary emphysema were studied (table 1). Twenty-four subjects were men whose ages ranged from 45 to 78 years. All subjects had been receiving sympathomimetic amines for several years. The subjects were studied as inpatients and were not acutely ill at the time of testing. Five subjects (7, 8, 20, 22, 23) were confined to bed or chair. The other subjects were ambulatory although restricted in activity by their disease. One patient (20) gave a maternal history of diabetes mellitus.

A wedge spirometer (Med-Science Electronics) was used for spirometry. The mean venous P_{CO_2} was obtained by means of the technique described by Collier.[4] Oxygen content and capacity of arterial blood were determined by the method of Van Slyke and Neill.[5] Bromsulfalein retention was measured at 45 minutes.[6]

TABLE 1: Clinical and Laboratory Data from Twenty-five Patients with Pulmonary Emphysema

Subject			Carbohydrate Intake (Gm./day)	BSP* (%)	FVC† (% predicted normal¶)	MVV‡ (% predicted normal¶)	Pv_{CO_2}§ (mm. Hg)	Resting‖ Sa_{O_2} (%)
No.	Age	Race and Sex		<5	>80	>80	<50	>91
1	67	WM	200	8	48	23	47	86
2	71	WM	250	6	55	33	43	87
3	66	WM	200	—	27	11	64	85
4	67	WM	100	—	37	17	39	89
5	60	WM	200	2	48	52	48	88
6	61	WM	200	8	54	33	45	89
7	78	WM	150	3	51	25	49	73
8	65	WM	200	2	33	27	53	85
9	72	WM	250	2	51	30	52	90
10	71	WM	200	3	67	25	55	85
11	62	WM	200	—	51	25	49	73
12	45	WF	150	6	61	27	60	81
13	62	WM	250	—	31	19	76	92
14	65	WM	150	6	47	31	76	90
15	69	WM	200	3	52	28	51	89
16	59	WM	200	2	34	37	58	86
17	72	WM	150	—	65	49	56	85
18	63	WM	200	4	49	23	52	86
19	57	WM	200	4	20	8	80	86
20	49	WM	150	8	22	14	73	89
21	66	WM	250	2	45	19	—	—
22	62	WM	200	2	42	23	53	88
23	77	WM	—	10	—	—	—	—
24	62	NM	—	—	33	23	47	—
25	56	WM	200	—	45	34	57	82

* BSP = Bromsulfalein retention at 45 minutes

† FVC = Forced vital capacity

‡ MVV = Maximal voluntary ventilation

§ Pv_{CO_2} = Mean partial pressure of CO_2 in mixed venous blood

‖ Resting Sa_{O_2} = Per cent oxygen saturation of arterial blood

¶ Baldwin, E. de F., et al: medicine, 1948, 27, 243.

The carbohydrate intake of 23 subjects was estimated daily for 3 days preceding the GTT. The meal trays were inspected before and after each serving. The grams of carbohydrate consumed were calculated from standard nutrition tables.[7]

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All medications, tobacco and food were withheld for 10 hours before testing. Anticoagulated (fluoride) venous blood specimens were drawn fasting and 30, 60, 120 and 180 minutes following the ingestion of 100 Gm. of glucose dissolved in 250 c.c. of water flavored with lemon. Blood glucose was determined by the Nelson-Somogyi method.[8] A peak blood glucose exceeding 160 mg. and a 2-hour value over 120 mg. was considered diminished glucose tolerance.[9] Clotted blood samples were drawn concurrently in 18 subjects, and serum phosphorus was determined by the method of Fiske and Subbarow.[10] A 25 per cent drop below the fasting level was established as a normal response.[11] Nine subjects were retested after 1 week with the cortisone GTT. A 2-hour glucose value in excess of 140 mg. was categorized an abnormal result.[9]

TABLE 2: Glucose Tolerance Test

Blood Sugar and Serum Phosphorus Response Following 100 Gm. of Glucose Orally

Subject No.	Fasting (P)*	½ hr. (P)*	1 hr. (P)*	2 hr. (P)*	3 hr. (P)*	Maximum % P Decline
1	78 (2.7)	112 (2.4)	152 (2.4)	81 (2.0)	94 (2.4)	39
2	88 (3.8)	134 (3.7)	115 (3.4)	90 (3.3)	88 (3.5)	13
3	68 (. . .)	172 (. . .)	237 (. . .)	94 (. . .)	36 (. . .)	—
4	75 (3.3)	111 (2.7)	120 (2.3)	90 (2.3)	78 (3.2)	30
5	84 (3.4)	165 (3.3)	194 (3.3)	49 (3.0)	52 (3.1)	12
6	86 (. . .)	127 (. . .)	129 (2.3)	126 (. . .)	102 (. . .)	—
7	75 (3.4)	127 (3.4)	123 (2.3)	99 (2.2)	82 (2.3)	35
8	57 (3.5)	126 (3.5)	177 (3.0)	74 (3.0)	— (. . .)	14
9	80 (3.9)	149 (3.7)	144 (3.2)	100 (3.0)	— (. . .)	23
10	76 (3.9)	112 (3.9)	133 (3.8)	85 (3.4)	56 (3.6)	13
11	78 (3.3)	152 (3.3)	90 (3.0)	76 (3.3)	61 (. . .)	9
12	63 (. . .)	102 (. . .)	105 (. . .)	115 (. . .)	126 (. . .)	—
13	71 (2.9)	138 (2.2)	169 (2.2)	80 (2.0)	94 (2.0)	31
14	81 (. . .)	130 (. . .)	148 (. . .)	127 (. . .)	95 (. . .)	—
15	73 (2.6)	240 (2.0)	205 (1.7)	80 (1.5)	63 (2.0)	35
16	78 (4.0)	120 (3.6)	130 (3.3)	88 (3.2)	75 (3.4)	20
17	130 (3.2)	255 (3.2)	320 (3.2)	360 (2.9)	295 (2.8)	13
18	112 (3.4)	170 (2.6)	220 (2.8)	205 (2.0)	170 (2.0)	41
19	76 (4.0)	145 (3.6)	222 (3.2)	260 (3.0)	186 (3.3)	25
20	91 (4.2)	127 (4.0)	194 (3.7)	170 (3.3)	122 (3.2)	24
21	69 (3.8)	213 (3.8)	148 (3.5)	149 (3.3)	49 (2.8)	26
22	77 (3.3)	140 (3.2)	188 (2.7)	202 (2.3)	107 (1.8)	45
23	95 (. . .)	254 (. . .)	246 (. . .)	146 (. . .)	— (. . .)	—
24	94 (. . .)	148 (. . .)	173 (. . .)	142 (. . .)	79 (. . .)	—
25	72 (. . .)	158 (. . .)	177 (. . .)	135 (. . .)	62 (. . .)	—
Av. Sugar ± SD	81 ± 15	153 ± 41	166 ± 58	129 ± 74	99 ± 57	

* Blood sugar and serum phosphorus expressed in mg. per cent.

Results

Glucose tolerance tests. When group averages are considered (table 2), the fasting value (81 mg.) is within normal limits; the peak blood sugar (166 mg.), occurring at 1 hour, and the 2-hour blood sugar (129 mg.) exceeded the criteria. When individual results are examined 9 of the 25 subjects (patients 17 to 25) gave an abnormal response.

Subject 12 did not fulfill the criteria for decreased tolerance. However, she did register unusual values, which increased progressively from fasting to 180 minutes. Six subjects (3, 5, 10, 11, 15 and 16) from the normal response group and 3 subjects (21, 24 and 25) from the abnormal group showed variable degrees of relative hypoglycemia at 3 hours; i.e., the blood sugar was less than the fasting value.

Serum phosphorus values were available in 12 subjects of the normal group. Five subjects exhibited a 25 per cent decrease from the fasting level. Serum phosphorus change was studied in 6 subjects of the abnormal group, and 4 demonstrated the arbitrary percentage decrement.

Cortisone glucose tolerance test. Subjects 1–9 who exhibited normal glucose tolerance were reexamined with the cortisone GTT (table 3). Mean-fasting 30-, 60-, and 120-minute values were elevated, and the 3-hour value showed a relative hypoglycemia. Subjects 5–9 exceeded the criterion of 140 mg. for the 2-hour value.

Five of the series (2, 5, 7 and 9) showed at least a 25 per cent decrease from the fasting level of serum phosphorus, and of these 4 demonstrated an abnormal blood sugar response. Mean values from the GTT of these 9 patients are also listed. The difference between GTT and cortisone GTT mean values was not analyzed because of the small study group.

TABLE 3: Cortisone Glucose Tolerance Test

Blood Sugar and Serum Phosphorus Response Following 100 Gm. of Glucose Orally and Cortisone 8 Hours and 1½ Hours Preceding the Test Meal

Subject No.	Fasting (P)*	½ hr. (P)*	1 hr. (P)*	2 hr. (P)*	3 hr. (P)*	Maximum % P Decline
1	95 (3.6)	115 (3.6)	170 (3.3)	120 (2.9)	100 (3.2)	19
2	100 (4.5)	130 (3.2)	208 (4.5)	90 (4.5)	46 (4.7)	35
3	65 (3.9)	185 (3.9)	260 (3.6)	76 (3.6)	42 (3.8)	8
4	82 (3.2)	180 (3.0)	170 (2.5)	105 (2.6)	65 (2.5)	22
5	104 (4.1)	219 (3.1)	302 (2.6)	244 (2.6)	93 (2.0)	51
6	89 (3.9)	108 (3.9)	141 (3.5)	165 (3.7)	70 (4.0)	10
7	108 (3.8)	180 (3.5)	240 (3.3)	215 (2.6)	130 (2.6)	32
8	92 (3.6)	168 (3.3)	215 (2.8)	200 (2.1)	46 (2.5)	42
9	93 (3.6)	165 (3.2)	112 (3.1)	174 (2.7)	98 (2.7)	25
Av. Sugar ± SD	92 ± 13	161 ± 36	202 ± 60	154 ± 59	77 ± 30	
Av. Sugar ± SD from the GTT	77 ± 10	136 ± 30	155 ± 40	89 ± 25	76 ± 22	

* Blood sugar and serum phosphorus expressed in mg. per cent.

Discussion

Early experimenters[12] showed that the liver is the sole source of blood sugar in the fasting animal. In a series of experiments Soskin and co-workers[13, 14, 15] demonstrated the vital role of the liver in carbohydrate homeostasis. Recent studies by Madison et al[16] reaffirm these observations. Antoniades et al[17] and Samaan et al[18] have suggested that insulin circulates in "free" and "bound" fractions, and the latter suggests that the liver may influence the transport form in the blood. Mirsky[19] has proposed an "insulinase" system permitting the liver to destroy insulin. Demonstration of an altered response to glucose testing demands consideration of hepatic dysfunction.

Nine of the 25 patients exhibited diminished glucose tolerance. Five patients with normal tolerance, when retested with the cortisone modified glucose tolerance test, gave an abnormal response. The magnitude of the fall in serum phosphorus was studied to differentiate diminished pancreatic beta-cell function or insulin antagonism from a hepatic-cell defect. A 25 per cent or more decrease of phosphorus from the fasting level was taken to indicate normal peripheral utilization of glucose. This criterion was satisfied in 4 of the 6 patients with an abnormal GTT and 4 of the 5 patients with an abnormal cortisone GTT. Subject 20 of the abnormal GTT group fell short by only 1 per cent. These results suggest an abnormal hepatic-cell response to a glucose load.

The hepatic defect suggested by this study may simply represent impaired glycogenesis. However, the animal experiments of Stetten and Boxer[20] indicate that lipogenesis may be quantitatively more important than glycogenesis in the disposal of unoxidized glucose by the liver. In the rat on a high carbohydrate diet 3 per cent of dietary glucose was converted to glycogen while 30 per cent was used to synthesize fatty acids. The remainder was oxidized. Regardless of the specific fault, the findings suggest that the hepatic response to a glucose load is sluggish and results in a delayed glucose uptake. Delayed responsiveness to falling blood sugar levels would explain low blood-sugar concentrations at 3 hours. If hepatic glucose discharge is retarded the release of sugar may lag sufficiently behind blood levels to permit a relative hypoglycemia.[21]

Subject 17 exhibited a grossly abnormal GTT, including the presence of fasting hyperglycemia. His added failure to show a significant fall in phosphorus concentration strongly suggests diabetes mellitus. Phosphorus decline will tend to increase in proportion to the elevation of blood sugar; thus, in the presence of adequate insulin, extreme hyperglycemia should produce a significant fall in serum phosphorus.[11] A normal GTT accompanied by a small decrease in phosphorus suggests predominant hepatic uptake of glucose resulting from depleted glycogen stores. This combination of findings was observed in 6 subjects.

Three subjects exhibited a normal cortisone GTT but did not attain the expected phosphorus decline. Hepatic storage in excess of peripheral uptake may explain these results. Persky et al[22] found that corticosteroids did not affect the fall in phosphorus concentration in acute experiments, and Danowski[23] has reported that the early effects of steroids do not include peripheral blockade of insulin action.

Himsworth[24] and Wilkerson et al[25] have shown that 125–150 Gm. of carbohydrate per day for 3 days is sufficient to insure normal glucose tolerance. The dietary check in 23 subjects shows that all met this minimum requirement except subject 4, who demonstrated normal glucose tolerance nonetheless.

Examination of the pulmonary function tests did not permit separation of those patients with decreased glucose tolerance from the rest. Similarly, there was no relation between the individual's response to the carbohydrate test and a liver function test. Seven patients (1, 2, 6, 12, 14, 20, 23) exhibited a mildly abnormal bromsulfalein retention, of whom 4 demonstrated normal glucose tolerance. Studies of glucose tolerance in subjects with known liver disease also have shown no correlation.[26]

Advanced age is associated with decreased glucose tolerance, and physical inactivity has been incriminated as the cause.[27] The influence of physical exercise on the regulation of patients with diabetes mellitus is known. Goldstein[28] suggests the presence of a muscle factor which can influence carbohydrate utilization. Three of the 5 chair-fast patients studied exhibited an abnormal GTT. Subsequently the other 2 patients demonstrated an abnormal cortisone GTT.

All subjects had been treated with epinephrine or related compounds for several years. Fasting normoglycemia in 23 of the subjects suggests that drug effect had disappeared by the time of testing. However, prolonged use of these drugs may have contributed to the results. Epinephrine acts to deplete hepatic glycogen stores.[29] Such depletion would explain those cases with normal glucose tolerance but only mild phosphorus decline.

All patients were free of pneumonia at the time of testing. However, experience indicates that some respiratory infection was probably present despite the lack of evidence in acute phase reactants or in X-ray films. Infectious inflammation is reported to decrease sugar tolerance.[30] Bacterial pathogens elaborate humoral substances which may influence the hepatic response to a glucose load. Decreased glucose tolerance, interpreted as secondary to hepatic dysfunction, has been reported following the parenteral administration of bacterial products to experimental animals.[14, 31]

Summary

Fourteen of 25 patients with pulmonary emphysema exhibited abnormal hyperglycemia following a glucose or cortisone-modified glucose tolerance test. The serum phosphorus change associated with the carbohydrate tests was studied to differentiate hepatic dysfunction hyperglycemia from hyperglycemia secondary to peripheral uptake failure. The observed normal phosphorus decline suggests a hepatic origin. The patients studied are elderly, physically inactive because of their disease, liable to recurrent pulmonary infection, and are on a regimen which includes adrenergic drugs. These factors and other determinants of glucose disposal are discussed. No single factor could be identified as causal.

The author is indebted to Dr. John Vance for advice concerning the pulmonary function tests and to Dr. Simon Rodbard and Dr. Cesar Caceres for helpful criticisms. Miss B. Wisniewski, nutritionist, Mr. Stuart Ferguson, P.N., Mr. James Goodrich, pulmonary technician, and Mmes. J. Ginty, R.N., E. Bowles, R.N., M. Kratts, R.N., and Miss N. Whelan, R.N. contributed significantly to this project.

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Disseminated Histoplasmosis with Laryngeal Involvement and Acquired Hemolytic Anemia

Report of a Case

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HISTOPLASMOSIS is an infection of widespread prevalence which assumes a multiplicity of clinical forms ranging from asymptomatic, inapparent infection to severe, disseminated, progressive, inexorably fatal termination. The disseminated types of disease occur in a variety of manners, and they often pose difficult diagnostic problems. The patient who is the subject of this paper had several manifestations which we think are of sufficient interest within the spectrum of Histoplasma infection to warrant a report of her illness. These manifestations included the initial localization of signs and symptoms to the laryngeal area and the concomitant occurrence of an apparently acquired hemolytic anemia in a patient who lived exclusively in Washington, D.C.

Report of Case

The patient was a 28-year-old unmarried Negro woman who was admitted for the first time to the Ear, Nose and Throat Department of the Washington Hospital Center on April 25, 1962. Her chief complaint was hoarseness of approximately 2 months' duration. She had been in good health until 2 months before when she developed a sore throat and cough. Two weeks of penicillin treatment produced no improvement. The sore throat and cough became gradually worse; she noted the onset of pain with speaking and "loss of voice." She was referred by her personal physician for treatment of the hoarseness, and she was then admitted to the hospital for a laryngoscopic examination.

A uterine dilation and curettage had been performed elsewhere in 1961 because of a "pelvic infection" of 3 years' duration.

The family history and review of systems contained no information pertinent to the patient's present illness.

The patient had been a bar maid-hostess in a tavern, and she had been consuming alcoholic beverages excessively for 3 years. She had lived in Washington, D.C. exclusively since birth. She had never been married.

The temperature was 99.0°F (oral); the pulse rate was 100 per minute; the blood pressure was 120/70; and the respiratory rate was 20 per minute. The patient appeared slightly pale, moderately well developed and nourished, and in no respiratory difficulty. She was unable to speak clearly; her voice was a low-pitched whisper. Many carious teeth were present. The lung fields were clear to percussion and auscultation. The cardiac rhythm was regular with a grade II/6 holosystolic murmur at the apex. The heart was not enlarged. The liver edge was palpable 3 cm. below the right costal margin. Its consistency was firm and elastic with a smooth surface, and it was not tender. The fundus of the uterus was palpable 2 cm. below the umbilicus.

A direct laryngoscopy was performed on April 26, 1962, the day after admission. The operative report stated that the epiglottis was white and swollen with a granular area at its tip. The arytenoid cartilages and aryepiglottic folds were likewise swollen. The true vocal cords appeared normal. Biopsy specimens were taken from the tip of the epiglottis and the right arytenoid cartilage. The microscopic diagnosis of these was "chronic granulomatous inflammation." The patient was transferred to the Medical Service on May 2, 1962 for evaluation of anemia.

On April 30, 1962 the hemoglobin content was 7 Gm. per 100 ml., and it was the same on May 4, 1962. Mean corpuscular volume was 91.5 cu. micra; mean corpuscular hemoglobin was 28 micromicrograms; mean corpuscular hemoglobin concentration was 30 per cent. The white blood cell count was 4,570 per cu. mm. The differential count showed total polymorphonuclear leukocytes to be 83 per cent with 70 per cent segmented forms and 13 per cent band forms, lymphocytes 17 per cent, and monocytes 1 per cent. Total serum protein was 5.4 Gm. per 100 ml. with an albumin-globulin ratio of 3 to 2.4; a sickle cell preparation was negative; hemoglobin electrophoresis showed A type only; serum iron was 96 micrograms per 100 ml. (normal 100–130). Total serum iron-binding capacity was 370 micrograms per 100 ml. (normal 270–350). Reticulocyte count was 2 per cent. Total bilirubin content was 0.4 mg. per 100 ml. with a partition of 0.2 mg. per 100 ml. direct and 0.2 mg. per 100 ml. indirect; blood urea nitrogen was 7 mg. per 100 ml.; and fasting blood glucose was 90 mg. per 100 ml. There was a 4 per cent retention of bromsulfalein at 45 minutes; serum glutamic-oxalic transaminase was 13 units; cephalin-cholesterol flocculation was 1 plus at 24 and at 48 hours; thymol turbidity was 1.2 units; alkaline phosphatase was 1.4 Besse-Lowry units. Two VDRL examinations were reactive. The Kolmer reactions ranged from 4 to 8 units. The PPD intermediate tuberculin skin test was negative, but the second strength PPD test was positive. Four sputum specimens and gastric aspirations for acid-fast stain and culture failed to yield tubercle bacilli. Coccidioidin and blastomycin skin tests were negative. A histoplasmin skin test was weakly positive. The 6-foot P-A and lateral upright X-ray films of the chest were interpreted as normal. X-ray films of the laryngeal area showed bulging of the posterior pharyngeal wall at the level of the larynx, which was interpreted as possibly representing a tumor in this area.

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The reason for the patient's anemia was not determined during the first hospital stay. She was dismissed unimproved on May 15, 1962 with the diagnoses of granulomatous disease of the larynx, etiology undetermined, condition uninproved; possible latent syphilis (for which penicillin was started); normochromic, normocytic anemia, etiology undetermined; and intrauterine pregnancy of 5 months' duration.

The patient was followed in the Medical Outpatient Clinic after dismissal from the hospital, and her clinical state became gradually worse. A VDRL test and a Reiter's protein complement-fixation test performed by the local Health Department laboratory were both negative. Her difficulty in swallowing resulted in inadequate food intake. It was thought that the advancing pregnancy was aggravating the severity of her anemia. Speech became progressively more difficult. When cultures of 2 of the gastric aspirations yielded *Histoplasma capsulatum* the patient was recalled to the hospital for further treatment on June 11, 1962.

Physical examination at this time showed great pallor and moderate respiratory stridor with a low-pitched, whispering, almost inaudible voice. The oral temperature was 99.6°F; the pulse rate was 92 per minute, and cardiac rhythm was regular; the respiratory rate was 20 per minute; and the blood pressure was 118/68. The lung fields remained clear to percussion and auscultation. The cardiac murmur was unchanged. The fundus of the uterus was palpable 3 cm. above the umbilicus. The liver edge and consistency remained as before. The spleen was not palpable. Bilateral pedal edema was present.

Additional laboratory examinations on admission showed evidence of a hemolytic anemia. The hemoglobin was 5.6 Gm. per 100 ml.; the hematocrit was 20 per cent; the reticulocyte count initially was 1.8 per cent with subsequent values ranging from 6 to 11 per cent during hospitalization following the use of folic acid treatment; the Coombs' tests both direct and indirect were positive; and the total serum bilirubin was 1.3 mg. per 100 ml., with indirect 1 mg. and direct 0.3 mg. The peripheral blood smear showed some polychromasia and slight macrocytosis of the red blood cells but no spherocytes; osmotic fragility of the red blood cells was normal. Initial bone marrow examination showed erythroid hyperplasia and megaloblasts. A second bone marrow specimen obtained after initiation of folic acid therapy showed persistence of the erythroid hyperplasia with disappearance of the previously noted megaloblasts. The presence of panagglutinins in the patient's blood made it impossible to match her blood with that of various donors. Red blood cell survival time using the radioactive chromium-51 method showed a half-life of the patient's cells of 19 days (normal 25–35 days) and an average red blood cell decrease per day of 2.6 per cent (normal 1.5 to 2.0 per cent). A radioactive vitamin B_{12} urinary excretion test (Schilling) showed 25.9 per cent 24-hour excretion (normal at least 13–15 per cent). Three systemic lupus erythematosus preparations were negative. Serum protein electrophoresis showed a total protein of 4.90 Gm. per 100 ml., albumin 1.59 Gm., and beta-2 globulin 0.44 Gm. with normal values for the remaining fractions. Serum sodium was 130 mEq/liter; potassium was 4.5 mEq/liter. The chest X-ray film showed bilateral basilar atelectasis. X-ray examinations of the larynx in the AP and lateral projections (figure 1) showed thickening of the epiglottis area, epiglottic fold, posterior laryngeal tissues and a tumor mass extending subglottically. There was a 5 by 7 mm. ulceration in the laryngeal face of the epiglottis. The

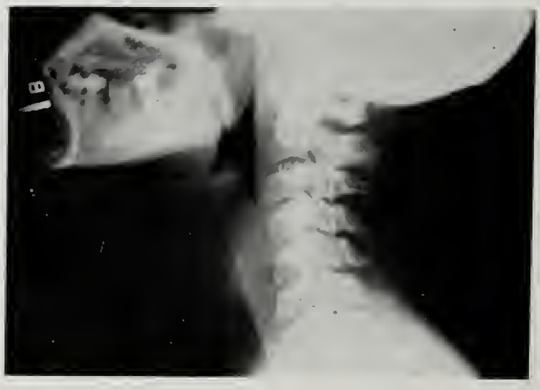

FIG. 1. X-ray film of larynx showing thickening of the epiglottis area, epiglottic fold and posterior laryngeal tissues. There is an ulcerated area on the inferior laryngeal face of the epiglottic mucosa.

epiglottis biopsy slides, reëxamined both by the Armed Forces Institute of Pathology, Washington, D.C. and the Washington Hospital Center Pathology Department, showed yeast forms characteristic of *H. capsulatum* after preparation with PAS (periodic acid-Schiff) and methenamine-silver nitrate stains. The complement-fixation titer for histoplasmosis with histoplasmin antigen was 1:8. The titer on the same serum was reported as 1:32 at the Walter Reed Army Institute of Research using yeast phase antigen.

Treatment with prednisone, INH® (isonicotinic acid hydrazide), and folic acid was started on the second hospital day, the prednisone for the hemolytic anemia, the INH because of the positive tuberculin test, and the folic acid because of the megaloblastic anemia of pregnancy (figure 2). The presence of panagglutinins against all donor blood precluded the use of blood transfusions, and this influenced the decision not to perform a diagnostic liver biopsy. Amphotericin B treatment was started intravenously in low dosage on the third hospital day and was increased daily. Dosage was started with 1 mg. in 500 ml. of 5 per cent glucose in water given over a 6-hour period. It was increased to 2 mg., then to 5 mg., with 5 mg. increments on successive days until a total dose of 50 mg. was reached. She was given 50 mg. of amphotericin B daily for 10 consecutive days; the dosage was then changed to 50 mg. every other day because of elevation of the blood urea nitrogen to 39 mg. per 100 ml. On the fourth hospital day the patient went into spontaneous labor and gave birth to a 2 lb., 11 oz. boy who lived 24 hours. Autopsy examination of the infant showed no evidence of histoplasmosis.

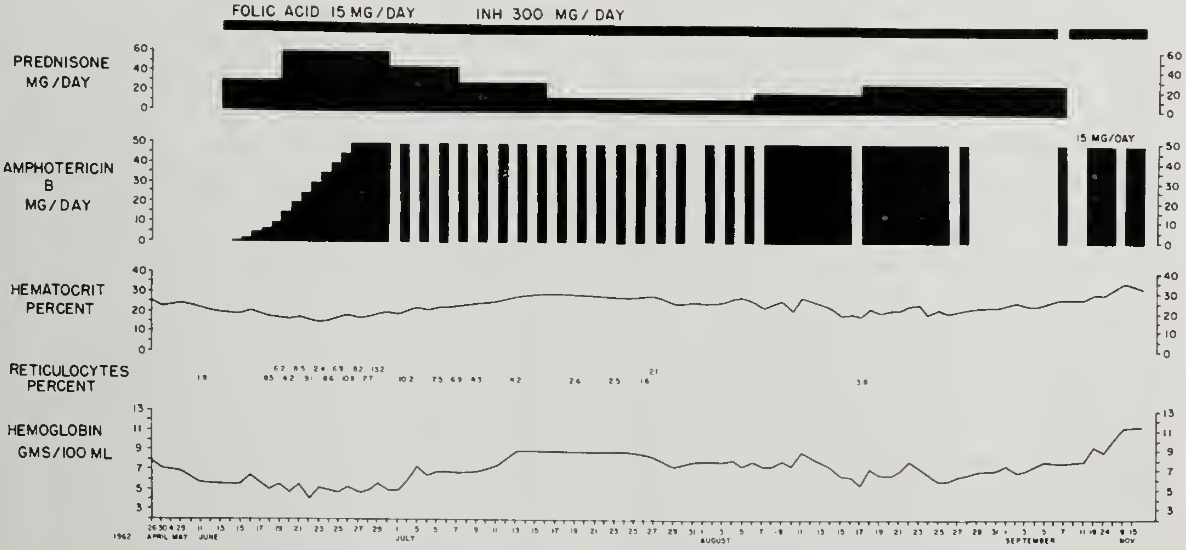

FIG. 2. Clinical course showing response of hemoglobin and hematocrit to treatment with amphotericin B and prednisone.

There was gradual improvement of the voice and the sense of well-being. By the third hospital week the patient was talking without difficulty in her normal voice. Repeat examination of the larynx by direct laryngoscopy on the thirtieth and seventy-eighth hospital days showed gradual improvement with only residual thickening of the epiglottis. The anemia improved steadily (figure 2). The spleen became palpable in August 1962 (third hospital month) but was not felt in September 1962. The patient made satisfactory progress and was discharged on September 6, 1962 (eighty-eighth hospital day). She was to be followed in the Medical Outpatient Clinic. She had received a total dosage of 2,435 mg. of amphotericin B while in the hospital. She received amphotericin B, 50 mg. twice weekly in the outpatient department for an additional several weeks. She also continued prednisone, INH, and multivitamins daily. She discontinued the amphotericin B of her own volition because of the discomfort and inconvenience. She returned for a follow-up visit to the outpatient department in November 1963. The hemoglobin was 11.5 Gm. per 100 ml., with a hematocrit of 36 per cent. The Coombs' test remained positive.

The patient did not return for further visits until April 10, 1963, when she came under the private care of one of us (E.A.B.). At that time she had no physical discomforts. She had remained on INH 100 mg. 3 times daily and prednisone 5 mg. twice daily in the interim. The only abnormality on physical examination was a soft, rounded liver edge palpable about 2 fingerbreadths below the right costal margin. The liver size diminished with successive examinations. The hemoglobin was 14.5 Gm. per 100 ml. Coombs' tests, both direct and indirect, were negative on May 13, 1963. The prednisone was reduced to 2.5 mg. twice daily for 1 month, then discontinued. The patient has been seen at regular intervals; hemoglobin and hematocrit levels have remained constant with minor fluctuations. She has remained asymptomatic to date (March 1964) except for several upper respiratory infections of limited duration and a minor menstrual irregularity.

Discussion

Although the exact time of the patient's exposure to infection cannot be ascertained, recent information and established knowledge of the epidemiologic features of *H. capsulatum* infections help provide a plausible explanation for the manner in which infection may have been acquired. The spore-producing saprophytic mycelial phase of this fungus grows luxuriantly in soils which are enriched with organic excreta of avian origin. Soils that are abundantly supplied with fowl or avian droppings such as in barnyards, areas in and around chicken houses, city parks, or caves where bat guano accumulates provide fertile media for the growth of the fungus. Epidemiologic studies of point-source groups of infection[1-7] have indicated that patients (and animals) probably acquire a primary pulmonary infection from the inhalation of air-borne spores in the dusty atmospheres near soils heavily contaminated with the organism. The spores themselves have been isolated from the air-borne dust in the infected areas of some of these studies.[8, 9] As a result of such investigations the respiratory tract has gained widespread acceptance as the natural portal of entry for infection. Animal-to-man and man-to-man transmission of this disease probably does not occur directly. Indirect transmission in association with the use of a feather pillow has been described recently[10, 11]; however, the patient in the present report used a foam-rubber pillow and never plucked a chicken in her life. The isolation in the past few years of *H. capsulatum* from soil contaminated with starling droppings in city parks in various parts of Washington, D.C.[12] indicates that the patient had ready access locally to infected or potentially infected environments and could probably have acquired her illness in the usual manner.

The initial, severely symptomatic manifestation of the patient's illness was the laryngeal lesion described. Evidence obtained from clinical, epidemiologic and pathogenetic studies[1-7, 13, 14] indicates that, as mentioned above, the respiratory route is the natural portal of entry for these organisms; entry through the skin or mucous membranes although possible is quite unusual and probably occurs only rarely. Animals may be experimentally infected readily by the pulmonary route with small numbers of spores; however, massive doses are needed to initiate infection by the oral route.[13] The spores do not penetrate intact skin and mucous membranes readily. These observations strengthen the hypothesis that skin and mucous membrane lesions represent manifestations of disseminated disease. Christie[15] has indicated that 50 per cent of adults observed by him showed signs and symptoms initially of skin and mucous membrane lesions; evidence of other organ involvement occurred later during the course of their illnesses. Rubin and associates[16] reported that patients with seemingly isolated mucous-membrane lesions usually had fatal progression of their disease within 1 year if untreated.

Mucous-membrane lesions of histoplasmosis tend to localize on the tongue, buccal mucosa, hypopharynx, larynx, epiglottis, and vocal cords. Perforation of the nasal septum may occur. Until definite cultural proof or biopsy evidence of histoplasmosis is obtained the diagnosis in patients with mucosal lesions as a manifestation of disseminated disease may be elusive. The early medical attention which the patient described in this report received is quite characteristic of patients who have lesions especially in the laryngeal area. She was seen first in the Department of Otorhinolaryngology, and she was presented later to the hospital Tumor Board. Patients with localized laryngeal lesions often receive diagnoses of carcinoma, tuberculosis, or sarcoidosis until appropriate laboratory examinations indicate the correct etiology. The mucocutaneous lesions of histoplasmosis may be confused with leishmaniasis. In areas where the latter is rare the converse may occur, as noted in a recent case report[17] of a patient with laryngeal leishmaniasis that simulated the clinical features of histoplasmosis.

One of the interesting features of this patient's illness was the presence of an acquired hemolytic disease manifested by profound anemia, presence of antibody-coated red blood cells, reticulocytosis, decreased red blood cell survival time, and bone marrow erythroid hyperplasia. An associated megaloblastosis, probably representing the nutritional deficiency of pregnancy, responded immediately to folic acid therapy. A reticulocyte response also occurred after the use of folic acid. The etiology of the hemolytic anemia is probably and logically related to the concurrent histoplasmosis. If so, it is one of the first documented examples of acquired autoimmune hemolytic anemias associated with this infection. Anemia has been reported in the past as a common feature of disseminated histoplasmosis, but it has been described usually as a hypochromic anemia or as the "anemia of infection."[18, 19] The gradual improvement in the anemia of the patient in this report coincided with the improvement in her voice and improvement in the histoplasma infection. Early in the illness, however, it was not possible to reduce or drastically limit the dose of steroids without relapse of the hemolytic process. It was apparent that treatment of both the anemia and of the infection was needed for the improvement of the patient's overall clinical status. The stability of the hemoglobin content and the reversion of the Coombs' test to negative 1 year after start of treatment while the patient was on small doses of steroids indicated that the process responsible for hemolysis was either in remission or had subsided completely. This also correlated with the patient's lack of signs and symptoms of active Histoplasma infection.

A possible mechanism that could be postulated to account for the development of this patient's anemia within the framework of current concepts of the pathogenesis of acquired hemolytic disease is the following: The disseminated histoplasma infection with its predilection for the reticulo-endothelial system tends to localize in the lungs, liver, spleen, bone marrow, lymph nodes, and adrenal glands. The characteristic lesion is an epithelioid-cell granuloma. These lesions proliferate, may coalesce, and usually cause enlargement of organs with the simultaneous destruction of parenchymal tissue. The patient's illness probably involved reticulo-endothelial hyperplasia resulting in splenomegaly and the production within the infected, structurally altered spleen of red blood cell antibodies. This mechanism is speculative, but in the absence of another predisposing, as yet undetected, etiology it would seem that the Histoplasma infection provides the best explanation for the development of the anemia.

Several authors have reported similar patients with histoplasmosis in whom the hematologic features bore some resemblance to the anemia described in the present report. Case number 13 reported by Conrad et al[20] had hypersplenism with pancytopenia and died from a spontaneous cerebral hemorrhage due to thrombocytopenia. The diagnosis was made by the presence of the yeast phase of the organism in the monocytes of the bone marrow, but the organism was not recovered culturally at autopsy. Davis and Ripka[21] recently described a patient who developed pancytopenia on the basis of culturally proven disseminated histoplasmosis. Clinical recovery of the patient occurred following the use of parenteral amphotericin B after treatment with corticosteroids for several months. The authors also referred to 4 other previously reported patients with pancytopenia and histoplasmosis who died from progression of the disease before effective chemotherapy was available. These cases indicate that histoplasmosis may be associated with other hematologic manifestations of reticulo-endothelial dysfunction.

Hypersplenic hemolytic anemia may be found occasionally in other infections. Jandl et al[22] reported 5 patients with hemolytic anemia caused by hypersplenism due to infection with miliary tuberculosis, subacute bacterial endocarditis, infectious mononucleosis, infectious hepatitis, and psittacosis. Splenomegaly, lack of red-cell antibodies, spherocytosis, and other manifestations of red-cell hemolysis characterized the cases. The authors postulated that by repetitious passage through the enlarged spleen the red cells became structurally altered, assuming the spherocytic shape. Sequestration and subsequent destruction of the altered red cells then occurred in the spleen, accounting for most of the hemolytic features seen in these patients. It appears that infections may cause hemolytic anemias due to hypersplenism and that various mechanisms may be operative to account for the way in which the red cells are destroyed.

This patient was fortunate to have developed her disease after effective chemotherapeutic treatment with amphotericin B had become available. Disseminated histoplasmosis has a fatality rate of 83 per cent according to a recent U.S. Public Health Service survey,[23] and treatment was clearly indicated in her case. Treatment with amphotericin B was given according to the recommended schedule and in an amount within the usually accepted range of total dosage.[24] She experienced the usual discomforts noted with the product available, namely, fever, shaking chills, nausea, vomiting, malaise, anorexia, and headache. She also developed an elevation of blood urea nitrogen which has been reported in a large percentage of patients. She was able to tolerate continuation of treatment with the drug on alternate days. Endurance of the discomfort of therapy was more than amply rewarded by a gratifying favorable clinical response.

Summary

Disseminated histoplasmosis, culturally proved, developed in a patient whose initial clinical features included a granulomatous lesion of the

laryngeal mucous membrane and an acquired hemolytic anemia of the auto-immune type. Treatment with amphotericin B resulted in clinical improvement both in the laryngeal lesion and in the anemia, but the latter could not be completely controlled without the use of large doses of corticosteroids early in the illness. The patient remains well more than a year after cessation of treatment, and she has no signs or symptoms of active Histoplasma infection. Her hemoglobin and hematocrit remain stable within the normal range, and there is no evidence of continued hemolytic activity. The significance of these lesions has been discussed with respect to their relationship to disseminated histoplasmosis. A possible mechanism has been postulated for the development of the anemia in this patient.

The authors are indebted to Dr. John P. Utz, Chief, Laboratory of Clinical Investigation, National Institute of Allergic and Infectious Diseases, National Institutes of Health, Bethesda, Maryland, and to Dr. Edward Adelson, Attending Physician, Consultant in Hematology, Department of Medicine, Washington Hospital Center, Washington, D. C., for helpful suggestions in the preparation of this manuscript.

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PRESIDENT'S PAGE

CORNERSTONE LAYING

When our Society lays the cornerstone of our new building this summer it will be an historic event.

The Medical Society of the District of Columbia originally held meetings in 1815, was formally founded in 1817, and was incorporated by an Act of Congress in 1819. We are probably the oldest scientific organization in the country chartered by Congress. Our Charter was signed by Henry Clay, Speaker of the House of Representatives, Daniel D. Tompkins, Vice President of the United States and President of the Senate, and James Monroe, President of the United States. We will celebrate our one hundred and fiftieth anniversary in 1967. A committee has already been appointed to properly commemorate this occasion.

Our new building, to be completed at 2005–7–9 Eye Street, N.W. in December, is the latest link in a long chain of meeting places and homes. We first met at Tennison's Hotel on Pennsylvania Avenue, moved to Strother's Hotel at Fourteenth Street and Pennsylvania Avenue, thence to McPhail's, and on to the "Medical Hall" just north of St. John's Church on Sixteenth Street. It is apparent that our predecessors combined conviviality with science. From 1827 until the completion of our present building at 1718 M Street, N.W. we gathered at approximately 20 places for varying durations. These included medical school buildings, old and "new" Georgetown Law Schools, and several infirmaries, hospitals and private homes.

Our present headquarters was erected in 1920–1921 through the dedicated work of Edward Y. Davidson and his committees. The Medical Society of the District of Columbia (scientific) and the Medical Association of the District of Columbia (ethics) had been merged in 1911, and a building was necessary. The committees were able to fulfill their ambitious plans and to meet the Society's needs because of special assessments, voluntary contributions from members, and donations from laymen and from the Woman's Auxiliary. Some of our present members continued their financial contributions to our present building for many years. I hope our present generation of doctors will recognize and accept their responsibilities in a similarly dedicated fashion.

We are looking forward to our new offices as we enter a bright new era of challenge to our profession. We shall have a modern medical society headquarters which will enable us to better fulfill our obligations not only to our members but, more importantly, to our patients and the public.

Paul R. Wilner

EDITORIALS

Discrimination—a Grievance

The Grievance Committee continues to face complaints alleging doctors' discrimination against patients because of race and religion. In handling these grievances the Committee tries to help the patient understand the Society's position in this matter.

In June of 1964 the Society adopted the resolution: "Membership in the Medical Society of the District of Columbia is based upon a physician's qualifications and ethical standards without consideration of race, creed, or color. The Executive Board believes that this should apply to all fields of medical care in the District of Columbia."

This is not a new policy but a reaffirmation of an old one. Indeed, the Society's membership has for many years been composed of white and Negro physicians as well as physicians of all creeds.

Although the statement of policy does not specifically include the patient-physician relationship, the Grievance Committee believes that "all fields of medical care" is applicable here. It further believes that the great majority of our member physicians do not discriminate.

Some members continue to exclude certain patients on the basis of color or faith. The Committee does not approve of such an approach to patient selection, but at the same time it defends a physician's right to practice it. It is fundamental to the free practice of medicine that the patient be free to choose his physician and, conversely, that the physician be free to choose his patient. The Committee can only hope that this choice will not rest solely upon the race or religion of the prospective patient. Actually, in response to the Committee's inquiry the physician usually indicates that it was not his intention to discriminate because of race.

When it answers complaints alleging discrimination the Grievance Committee makes these points clear. It states the Society's policy on discrimination firmly, then follows with a clear indication of the bilateral aspect of free choice.

The Committee recognizes that many of these complaints may be sparked by the patient's dissatisfaction with the fee or with some other aspect of his care. But he writes about discrimination. The temper of our times doubtless contributes to this tendency. Lifelong attitudes on the part of both doctor and patient probably play significant roles, too. Whatever the contributing factors may be, the complaint is of discrimination and the Committee must handle it on that basis.

The Grievance Committee recommends that each physician try to avoid ill feeling between himself and his patients which can be interpreted as indicating bigotry. More than decreasing the number of complaints to the Committee, it will help improve the individual's impression of physicians. This is particularly important now, when the public's view is less than flattering.

Robert R. Montgomery, M.D.

Teamwork in Industrial Medicine

Since September 6, 1921, when The Chesapeake and Potomac Telephone Companies established a Medical Department, there has been a continuing effort to make certain that all medical activities were carried out within the principles of medical ethics of the American Medical Association and with full regard for and recognition of the private physician-patient relationship. We have

Opinions expressed in contributions to the Editorial Section are those of the writers and do not necessarily reflect the views of the Medical Society of the District of Columbia

strived constantly by our policies and actions to ever be aware of the importance of the personal physician in the field of advising and treating our employees and our own role in the area of preventive medicine. We have been gratified and pleased with the coöperation given to us by the physicians in private practice in the communities in which our companies operate. Over the years we have come to regard our daily relationship with our employees' personal physicians as one of teamwork dedicated to the best interest of the patient.

The general medical policy statement of our companies is officially spelled out as follows:

"One important factor in the ability of The Chesapeake and Potomac Telephone Companies to provide the best possible communication service is the effective response of telephone men and women. Because the health of our employees has a significant influence on this response, it is a traditional and proper concern of our Companies. While we recognize that the maintenance of good health is primarily a personal responsibility, our Companies have an obligation and opportunity to use the techniques of preventive medicine for the prevention of disease and injury and the promotion of optimal health and productivity."

R. Lomax Wells, M.D.
General Medical Director, The Chesapeake and Potomac Telephone Companies

"Waiting Room Sense and Nonsense"

When the many Washington friends of Dr. George J. Brilmyer see his newly published book in the reception room of their colleagues, each is going to ask himself, Why didn't I think of doing this myself? The book has an appropriate title, "Waiting Room Sense and Nonsense," and came about because the author himself, as a boy, noted that waiting rooms of doctors and dentists as a rule contained reading material "sadly lacking in quality and quantity." Deciding then and there to do something about it, he began in 1909 to collect "wise and otherwise little sayings" which he has now, upon retirement, compiled into a little book of 96 pages.

Dr. Brilmyer, long an Active member of the D. C. Medical Society, is presently an Associate member. After 20 years as a general practitioner in the Nation's Capital he passed his Boards in clinical and anatomical pathology. He taught pathology in 2 medical schools, 4 years at George Washington University and 12 years at Georgetown; he taught biology at Catholic University for 28 years. His book is dedicated to the memory of his former students in medicine, dentistry and the biological sciences. He left Washington in 1947 to become a pathologist with the Veterans Administration, to which he has given 15 years of service, the last 7 at the Wilkes-Barre (Pa.) VA Hospital.

This is a book full of humor ("A camel is an animal that looks as if it had been put together by a committee"), witty sayings ("Our exit in death may be due to too many entrees in life"), and gems of wisdom ("The good self-made man has a lot of working parts"). These are examples taken at random. It is hard to choose the best ones because every page is so jam-packed with these terse comments on human nature that any selection seems to be topped immediately by the one preceding or following it. As the author says, the book is designed so "you can start on one page and read both ways."

Published by Vantage Press, it is available at $2.75 a copy. The author hopes his friends will buy copies for their friends, waiting rooms, libraries, and mothers-in-law. He closes his introduction with: "The best of luck to you all. Drop me a line sometime but kindly omit putting any fish on it." His address is 58 East Union Street, Kingston, Pa.

A. L. E.

Health Dept. Notes

Funds Received for Mental Health Center

The District of Columbia Department of Public Health has been awarded $399,782 by the National Institute of Mental Health to install and operate a demonstration project in community mental health.

This amount represents first-year support of a 5-year program. The Institute has recommended future financing to total $1,677,706 over the full 5 years.

These new funds will provide for initial staffing, equipment and supplies for the District's first Community Mental Health Center, which will be located on the grounds of D. C. General Hospital.

It will offer some centralized mental health services to all residents of the District, but it will be of particular benefit to persons living in the Health Department's Area C. This is the Department's designation for a part of the District which includes much of the Northeast and Southeast sections, and has a population of 240,000.

This demonstration award will permit activation of the new mental health plan which we announced for the District last year. Under this plan the District is organized into 4 health service areas, with a Community Health Center in each.

At that time we indicated that Area C would have a certain priority in acquiring such a Center. This is because there is a known need for mental health and other services in Area C, and there are existing Departmental facilities and staff already located in that area. We have recently transferred some personnel and program activity to the new Center at D. C. General, making it the nucleus for our demonstration project in community mental health.

It is important to note that the Department will coördinate the program with the public schools, Welfare, Recreation, Vocational Rehabilitation and other agencies providing collateral services to these patients. The program also emphasizes maximum utilization of existing community programs and facilities.

TB Prophylaxis for Northwest Tract

A special project to detect and control tuberculosis has been announced by the Department of Public Health for a 30-block area in the Northwest.

The prophylaxis program will begin immediately in Census Tract 49, an area of high TB incidence in the Second Precinct. This tract has a population of 9,000 persons and runs north from Massachusetts Avenue to S Street and from Seventh Street west to Eleventh Street.

The project provides for registration of each individual living in Tract 49, with a Public Health nurse to give tuberculin skin-tests in the home to each person over 2 months of age.

Reactors will then be given chest X-rays and, if necessary, referred to the Department's Northwest Central Clinic. If tuberculosis is found, that person will receive clinic or hospital care appropriate to the stage of the disease, as would anyone with a TB diagnosis.

Meanwhile, those who skin-tested positive but are not active cases will be given the preventive medication isoniziad and maintained on the drug for 1 year.

In our last report year there were 27 new active cases of TB in this census tract. It ranks among the 3 highest TB areas in the District.

The U. S. Public Health Service has provided $100,801 to support the program through December of this year, with added funding available after that. The Health Department has also worked with the National Institutes of Health at Bethesda to adapt certain drugs and supplies to the needs of this project.

A special staff will be assembled in the Health Department for this project, including a medical officer, 2 Public Health nurses, clerical and administrative personnel, and 24 Public Health aides. The latter will make the first household canvass, assist the nurses, and, under medical supervision, deliver the isoniziad pills to each patient every 2 weeks. The aides will also note any factors in the patient's home which might affect taking of the medication.

Participation in the program is voluntary on the part of the residents. However, a major public health educational effort will be made to explain the nature of tuberculosis and the importance of this prophylaxis.

Information Center Due Soon

An Information and Referral Center for all Public Health services in the District of Columbia will be opened within the next few weeks by the Department of Public Health. The Center will be located at 819 Ninth Street, N.W.

To anyone making inquiry the Center will provide ready information on all Health Department clinics, facilities and other available services. Such information includes the nature of the services, clinic hours and locations, eligibility and other legal requirements, and similar specific facts. The Center will handle inquiries by mail, by telephone, and directly to persons visiting the Center.

The purpose of this new Center is to make services known and available to the persons for whom they are intended. An eligible user of our clinics and other services will first learn that such services are offered, next find that they are available to him, and finally, be guided to that service with as little delay as possible.

The Center staff will include a receptionist, an information clerk, 2 social workers, and a supervising information specialist.

MURRAY GRANT, M.D., D.P.H.
D.C. Director of Public Health

A Mace for the American College of Physicians

WITH THE HELP of modern science and Dr. Theodore J. Abernethy, of Washington, a limb from a tree under which the Father of Medicine, Hippocrates, is said to have taught 24 centuries ago has been turned into the shaft of a ceremonial mace for the American College of Physicians. The mace was used for the first time, March 25, at the Golden Anniversary meeting of the College in Chicago, during ceremonies inducting new Fellows into membership.

More thaan 2 yers ago officials of the College and the United States and Greek Governments arranged for the limb to be cut from a plane tree on the Greek island of Cos, where Hippocrates was born in 460 B.C., and where, according to legend, he taught and practiced medicine. There he also developed the Code of Ethics to which practitioners of his calling have pledged themselves ever since. The Hippocratic Oath is said to have been administered by him to his students under the famed Hippocratic tree of Cos.

During the Middle Ages the mace, originally a weapon, became a ceremonial symbol used by religious leaders, heads of states and cities, and universities. It is still so used.

Dr. Abernethy, then a Vice President, now a Regent of the College, set in motion the chain of events that was to bring the tree limb to America for transformation into a mace shaft. On December 12, 1962, he wrote his friend, the Honorable Henry R. LaBouisse, Ambassador to Greece, for help in getting a piece of wood from the legendary tree. Ambassador LaBouisse contacted John Zigdis, member of the Greek Parliament representing Cos, who obtained official permission to cut the limb from the famous tree.

Henry A. Baehr, then agricultural attaché at the United States embassy in Athens, handled shipping arrangements, including a certificate from the Mayor of Cos attesting to the genuineness of the limb as "derived from the historical plane tree of Hippocrates at Cos."

On March 20, 1963, the rough 5-foot, 8-inch log, weighing 45 pounds, was delivered to Dr. Abernethy in Washington. "It didn't appear as weatherbeaten as I had anticipated," he recalls. "The brownish-green bark had come off in irregular patches, producing a colorful mosaic."

Dr. Abernethy next contacted the College's Board of Regents. It was decided to use the limb as a mace shaft, with a suitable silver head and base. Dr. Abernethy got in touch with a Mr. Ray M. Seborg, of the Forest Products Laboratory in Madison, Wisconsin. Seborg with the assistance of other Federal agencies conversant with wood products spent several months in preparing the shaft. This included X-raying the wood for defects.

On receipt of the treated shaft Dr. Abernethy turned it over to Don Turano, noted wood-carver who is a member of the Corcoran Art Gallery staff and of the National Sculpture Society.

DR. THEODORE J. ABERNETHY (left), Vice President of the American College of Physicians, and Dr. Irving S. Wright, New York City, admire the mace made from the Tree of Hippocrates which was presented to the College during its Golden Anniversary Session in Chicago, March 22-26.

At the upper end Turano carved a full-length miniature relief of Hippocrates teaching students at his feet under a plane tree. At the lower end of the shaft he placed 2 snakes winding around the wood, as well as the first sentence of the Hippocratic Oath, carved in ancient Greek capital letters.

Meanwhile, at the suggestion of Dr. Irving S. Wright, of New York City, a Regent of the College, the Garrard Company, crown jewelers of London, wrought a beautiful silver and gold triangular pointed head, featuring the Lamp of Learning, the Book of Knowledge, and the Gentian Flower, all emblematic of medicine and the American College of Physicians. The base was fashioned entirely of silver, and at its topmost portion was engraved one of the aphorisms of Hippocrates—"Life is short and the art long."

(Continued on page 300)

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Office Rounds with an Acupuncturist in Saigon

JOHN B. JOHNSON, M.D., F.A.C.P.

Professor of Medicine, Howard University College of Medicine

Even a short visit to Southeast Asia is filled with so many new and memorable experiences that one keeps rubbing his eyes in amazement and disbelief.

We were 5 American physicians—Dr. Helen Taussig of Johns Hopkins, Dr. Alice Palmer of the United States Overseas Mission, Dr. Forrest Adams of U.C.L.A., Dr. Grey Dimond of Scripps Research Foundation, and I. Four of us were on the eve of our departure from Saigon. Dr. Dimond, who knew that acupuncture was practiced in that part of the world, asked Dr. Palmer to arrange a visit where we might see this ancient Chinese art of healing in actual practice. The word by derivation (*acus*—needle, *punctura*—puncture) implies healing by needle puncture.

Dr. Palmer arranged our visit. We traveled from the heart of the city toward the suburbs of Saigon. The streets were crowded with people on bicycles, motor bikes or 2-seated motor taxis, busy going and coming we knew not where. On the side streets there were hundreds of children who collected at a moment's notice when our car slowed down on what appeared to be a circuitous route to the Acupuncture Clinic. Occasionally we saw small groups of soldiers manning tanks and machine guns about strategic bridges, but from the appearance of the people in the streets and the children one did not get the impression that a serious war was in progress.

Finally we reached our destination. As we walked into the waiting room we were greeted by an obviously successful doctor. He was dressed in Western-style clothes and spoke English well. He had understood correctly that we were American physicians, genuinely interested in seeing this medical art in practice. He was an affable, friendly man who felt at home with physicians. He served us tea and began immediately to tell us about his art and his own medical background. Doctor Nguryn Van Ba was a physician, a graduate of Hanoi, a standard medical school in the French tradition. In addition he had done a residency and postgraduate study in medicine in Paris.

After some years in regular practice he had become convinced of the importance of acupuncture as a healing art. He then did postgraduate studies under internationally known acupuncturists in France, Germany and Japan. In 1959 Dr. Ba presented a paper, "Anatomical Location of the Categories of Acupuncture Points," at the International Society of Acupuncturists in Paris. He showed us interesting illustrations from his paper and permitted us to photograph some of them.

Doctor Van Ba—Acupuncturist of South Viet Nam

His offices and treatment rooms were well appointed and well staffed with nurses and assistants. During the course of the morning he treated patients with heart disease, asthma, arthritis, migraine, dizziness, and "spermatorrhea." We noted that he spent considerable time initially, palpating the wrist of each patient which as we now understand may have been related to "diagnosis." Prior to his contact with the patient his nurse took a history and arranged his patients on an examining couch in individual rooms. For each patient the nurse brought in a tray with acupuncture needles and alcohol sponges.

As we walked from one patient to another it was obvious that this man had an abounding sense of confidence and security in his art. He radiated this positive sense of success to each of his patients as we followed him from one to the other. He identified the acupuncture treatment areas for a variety of disorders. The puncture point for asthma was on the anterior chest near the manubro-sternal junction, while the point for hypertension and the heart is located on the ulnar side of the volar aspect of the left wrist. The point for liver disease is located on the dorsum of the foot near the base of the great toe.

We were assured as we witnessed each of the treatments that the patients would be cured by this program of therapy. We were handicapped in an attempt to assess the result of this therapy, because we had no way of validating the diagnosis from his records. Although the doctor was familiar with the use of the stethoscope and baumanometer, neither was used in diagnosis, nor were laboratory tests used in the work-up of the patients. When he stated that his treatment program had cured a hypertensive patient, we had no way of knowing what the blood pressure was before and after treatment. As we completed the diagnostic and treatment rounds in the offices of an acupuncturist, we knew we had had an experience which was simply unbelievable for a physician not familiar with the theory and practice of this art. The experience was quite in contrast to that of the 3 days we had spent in the medical school of Saigon where the French tradition in the medical sciences is everywhere dominant.

After leaving Saigon I became interested in learning more about the history and traditions of acupuncture. It is an ancient Chinese art of healing which has been taught to generations of medical students in China for more than a thousand years. In recent decades the art of acupuncture can be found in practice, not only in China and Japan, but also in Russia, Southeast Asia, and Western Europe. In several countries National Acupuncture Societies exist.

Theories of Acupuncture as a Healing Art

Healing by acupuncture is said to be based on the ancient oriental teachings that the vital energy of life "Qi" circulates through the body in a nonvascular network, different from the nervous system, in a pattern of 12 meridians.

A state of health is maintained as long as the flow of energy is in constant balanced equilibrium. When blockage of "Qi" occurs, excess energy accumulates in certain parts and a deficiency in others, resulting in disease. The diagnostic challenge to the acupuncturist, therefore, is to determine the location of the blockage and the organs involved in energy excess or deficiency.

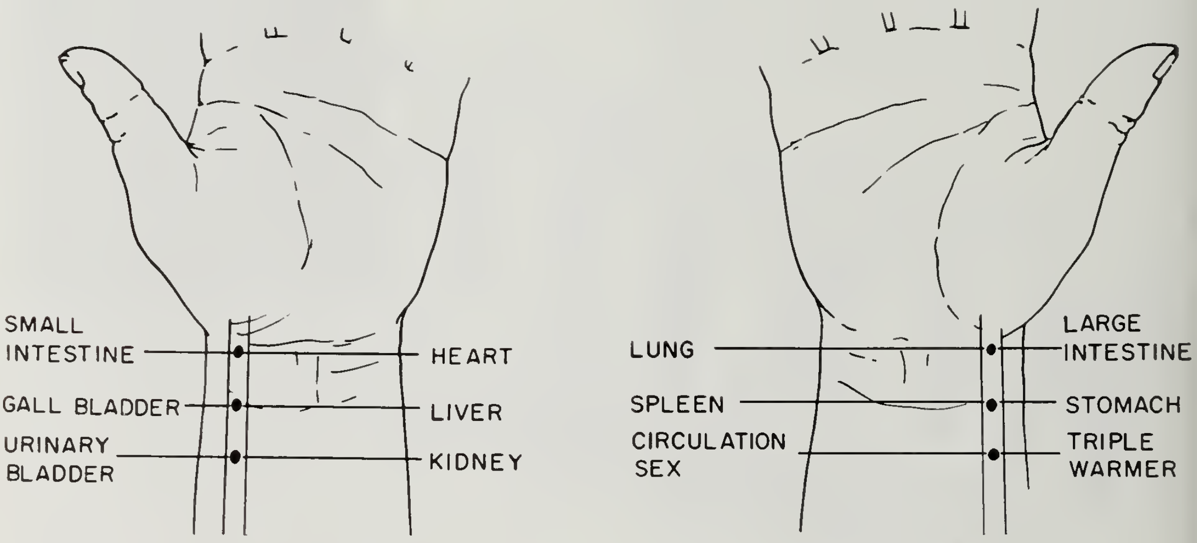

FIG. 1. Pulse diagnosis in the art of acupuncture (modified from Mann[1]).

Diagnosis in Acupuncture

Diagnosis by the acupuncturist is based on 3 parameters:

1. The general appearance of the patient, including skin color, warmth, consistency, and thickness.

2. "Needle reaction." The significance of this parameter was not clarified. The distal few cm. of the 2 radial arteries are said to carry the secret.

3. "Pulse diagnosis." This is the keystone of diagnosis for the acupuncturist. The distal few cm. of the radial arteries are said to carry the secret of diagnosis of disease of individual organs. The radial artery is divided into 3 zones of about a half inch each, which, when palpated with gradually increasing pressure by the skilled acu-

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puncturist, provides diagnostic information. These zones and the organs and junctions they monitor are presented diagrammatically in figure 1.

The 'triple warmer' is not an organ but is said to be a function related to sympathetic-parasympathetic balance. Circulation-sex is also a function particularly related to hypertension, swollen veins, genital organs, sexual inadequacy, or sexual excitement.

After the diagnosis has been established the remaining problem is placement of the nonmedicated needle into the right acupuncture point on the proper meridian of the diseased organ.

The body has many organs, but according to traditional acupuncture there are only 12 all-important organs and bodily functions. Each of these has a fixed energy circulation network, yet each interconnects with the other. All are represented on the surface of the body and constitute the meridians. The "12 all-important organs" and functions are illustrated in figure 1. (Why the brain and adrenal are not included in the all-important dozen is not clear.) The acupuncture points, located along these meridians, are about 1,000 in number, although it is said that only about 50 of these are considered of importance for the therapeutic benefit of the patient.

According to the English acupuncturist, Mann,[1] these points are about a tenth of an inch in diameter and lie at varying depths beneath the skin. They are said to be organ-specific. They become active in disease of specific organs, i.e., spontaneously painful, tender to firm pressure in some instances, tender to light stroking with the finger tips in others, and at times slightly edematous. With long practice, knowledge of the general anatomic area of the acupuncture point to be sought, and its 'activation' by disease, the skilled acupuncturist is said to have no difficulty in locating the 2.5 mm. area for placement of the therapeutic acupuncture needle.

The solid gold or silver needles are shaped like an ordinary straight pin with a larger, spherical head. Our host preferred to use the gold needles exclusively. According to Mann the choice of metal is dependent on whether the therapeutic effect desired on the diseased organ is one of 'tonification' or 'sedation.'

The needle is left in place for a few minutes before removal. Local anesthesia is unnecessary. After treatment sessions several times per week for a variable period an exchange of energy between the organs and meridians is said to be effected, reëstablishing uninterrupted energy circulation and restoration of health.

That morning in Saigon was an interesting and new experience. It was quite obvious that the psychosomatic ills of many of the acupuncturist's patients might be improved as a result of the dynamic optimism of his personality and his technical skills. Our backgrounds could not let us expect more.

On reading the book titled "Acupuncture—The Ancient Chinese Art of Healing"[1] I was surprised to find the following statement as a part of the Foreword by the distinguished British writer, Aldous Huxley:

"That a needle stuck into one's foot should improve the functioning of one's liver is obviously incredible. It can't be believed because, in terms of currently accepted physiologic theory, it makes no sense. Within our system of explanation there is no reason why the needle-prick should be followed by improvement of the liver function. Therefore, we say it can't happen.

"The only trouble with this argument is that, as a matter of empirical fact, it does happen. Inserted at precisely the right point, the needle in the foot regularly affects the function of the liver."

Reference

1. Mann, F.: Acupuncture—The Ancient Chinese Art of Healing. New York: Random House, 1962.

Medicolegal Abstracts

A patient may call as an expert witness the physician against whom he has brought suit. This principle was stated clearly by the Court of Appeals of New York.

A patient had an unsuccessful corneal transplant with decrease in her visual acuity. She sued 2 doctors and a hospital, alleging that her disease (Fuch's dystrophy which extended to the periphery of the cornea with uncorrected vision of 20/200) did not require corneal transplant. Indeed, she held that it was contrary to standard medical practice to advise a transplant in such circumstances. She sought to call the physicians against whom the suit was brought as witness of opinion as well as fact. The court denied this request.

The Appeals court held that the trial court erred in this refusal. It did note, though, that it may be the height of optimism to expect the patient to gain anything from the testimony of the doctor she is suing if he serves as an expert. It is the patient's right to decide whether to do so.

* * *

In California a doctor was found not liable for a patient's death from anaphylactic shock following penicillin injection. It was shown that he did not inject the material intravenously, and that he did treat the anaphylaxis promptly and correctly. There was substantial evidence that anaphylactic shock is rare, but is an inherent risk in the use of penicillin. This patient had even assured the doctor that she had had no trouble with previous penicillin injections.

Comment: The resolution of this case in favor of the physician is reassuring, but the details of the case indicate the need for extreme care in using penicillin. Appropriate measures should be available instantly for the management of such untoward reaction.

* * *

In New York a settlement was reached ($300,000) in a suit against a hospital, a surgeon, and an anesthetist. The case involved a 10-year-old boy who suffered a cardiac arrest in the recovery room following surgery. The boy is permanently and severely impaired as a result of the arrest.

The plaintiff contended that the surgeon and anesthesiologist were negligent in not remaining with the patient in the recovery room and in failing to make sure that the recovery room was properly equipped and staffed. It was also alleged that the hospital was negligent in failing to maintain an adequate recovery room and to enforce proper rules for the conduct of surgical procedures, and that the nurse, who was alone in the recovery room, was inexperienced and failed to detect the cardiac arrest for several minutes.

Comment: There are many inferences to be drawn from the settlement of this case. The warning to all who operate or use recovery rooms is clear.

* * *

Two recent cases concerned falls while in hospitals. In one, in Oregon, a 73-year-old man fell and suffered injuries. He was up, contrary to his physician's orders, reaching for a bed pan. However, he had been given morphine 2½ hours earlier (because of a heart attack) and may have been "unconscious or in a deep sleep" therefrom. He had no side rails in place. The hospital was judged negligent in not furnishing constant personal attendance because of the danger of his falling in view of his "unconscious condition" from drugs.

In Georgia a man fell from the X-ray table, was injured, and later died from these injuries. He had had a retrograde pyelogram and was dazed and nauseated when he was left alone by the technicians. The court held that they should have been able to foresee the possibility of his leaving the table to relieve his nausea and falling because of the effects of the drugs which had been administered (Demerol®, Pentothal®, and atropine). His widow was entitled to receive damages.

Comment: Both cases involved 2 elements, drug administration and leaving the patient alone. The courts recognize the possibility of a patient becoming imprudent while under the effects of certain medications and trying to walk or make other movements which the physician might have proscribed. In these 2 cases it was found to be the responsibility of the hospital to protect the patient under these conditions.

* * *

In reporting one case from Minnesota the *Citation* inserts an informative paragraph which need

(*Continued on page 300*)

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Usual dosage: Adults — 250 mg. every six hours in respiratory infections; 500 mg. every six hours in urinary and gastrointestinal infections (higher doses may be needed in severe infections). Children — (under 13 years, whose weight will not result in a dosage higher than that recommended for adults) 100 mg./Kg./day in divided doses every six or eight hours for moderately severe infections; 200 mg./Kg./day in divided doses every six hours for severe infections.

Contraindications: (1) Hypersensitivity to penicillin. (2) Infections by penicillinase-producing staphylococci and other penicillinase-producing organisms.

Side Effects: Mild effects, such as skin rashes, diarrhea, nausea and vomiting have occasionally appeared.

Precautions: As with other antibiotics, precautions should be taken against gastrointestinal superinfection. To date, safety for use in pregnancy has not been established.

Supplied: No. 606 — Each capsule contains 250 mg. of ampicillin. Bottles of 16 and 100.

References: 1. Editorial. Brit. M. J. *ii*:223 (July 22) 1961. 2. Rolinson, G. N., and Stevens, S.: Brit. M. J. *ii*:191 (July 22) 1961. 3. Stewart, G. T., *et al.*: Brit. M. J. *ii*:200 (July 22) 1961. 4. Brown, D. M., and Acred, P.: Brit. M. J. *ii*:197 (July 22) 1961. 5. Batchelor, F. R., *et al.*: Nature *183*:257, 1959. 6. Knudsen, E. T., *et al.*: Brit. M. J. *ii*:198 (July 22) 1961. 7. Doyle, F. P., *et al.*: Nature *191*:1091 (Sept. 9) 1961. 8. Acred, P., *et al.*: Brit. J. Pharmacol. *18*:356, 1962. 9. Harrison, P. M., and Stewart, G. T.: Brit. J. Pharmacol. *17*:420, 1961. 10. Editorial. Lancet *ii*:723 (Oct. 5) 1963.

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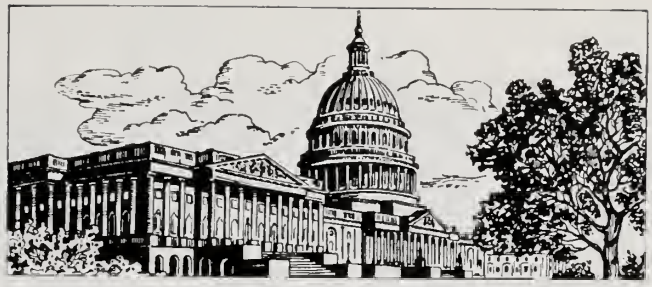
**Tainter, M.L. and Buchanan, O.H., Ann. N.Y. Acad. Sc. 54:438, 1954*



NEWS & PERSONALS

Summary of Executive Board Actions

The Executive Board of the Medical Society of the District of Columbia held a dinner meeting in the Society's building, April 19, 1965. Presiding at the meeting was Dr. Duane C. Richtmeyer, Chairman of the Board. Present also were Drs. C. Willard Camalier, Jr., Karl C. Corley, Darrell C. Crain, J. Spencer Dryden, Raymond T. Holden, Kenneth L. McCoy, Edward W. Nicklas, Paul R. Wilner, and Mr. George W. Cooley, Secretary. The meeting was called to order by the Chairman at 7:00 p.m.

Committee Meetings: The Secretary reported that the following meetings had been held since the last meeting of the Board:

March	23	Liaison Committee with Public Health Department
	24	Council on Specialty Sections
	24	Committee on Armed Forces and Veterans Affairs
	25	Liaison Committee with Public Health Department
	29	Committee on Postgraduate Education (Program Committee, Scientific Assembly)
April	9	Fee Review Committee
	14	Board of Credentials
	15	Liaison Committee with Public Health Department

Board of Credentials: The Executive Board approved for membership the following applicants recommended by the Board of Credentials.

Active Members

Steven Joseph Conway, Andrews Air Force Base Hospital
Kenneth Andrew Grigg, 5225 Connecticut Avenue, N.W.
Alicia Elizabeth Hastings, Freedmen's Hospital
Robert Gillis Kindred, 2025 Eye Street, N.W.
Beale Hibbs Ong, 4201 Cathedral Avenue, N.W.
Bonita Jeanne Peterson, Columbia Hospital for Women

Associate Members

Ohannes Sahakyan, 5813 Landover Road, Cheverly, Md.
Alkinoos Vourlekis, 1610 New Hampshire Avenue, N.W.
Hans Wodak, 115 Centerway, Greenbelt, Md.

Council on Specialty Sections: Dr. Dryden reported on the first meeting of this new Council. He advised that the officers of the Specialty Sections seemed pleased at the opportunity to come together to discuss mutual problems and to assist the Board. The Council had approved the revised form of the By-laws suggested for use by the Sections.

Dr. Dryden reported that the obstetrician-gynecologists had requested a Section, which had the approval of the Council, and that he had received the completed By-laws of this new section.

The Board approved the report and the formation of a Section on Obstetrics-Gynecology. It also approved the suggestion of the Council that Dr. Dryden be authorized to appear before the Washington Orthopedic Club and the Washington Urological Society to urge those groups to establish Sections of the Medical Society. Dr. Dryden was also requested to check on the Section on Gastroenterology to determine whether it is still active.

Licensure of Psychologists: A letter addressed to Dr. Murray Grant from Dr. Leon Yochelson, Chairman of the Committee on Mental Health, opposing the licensing of psychologists and the reasons therefor, was approved.

Annual Scientific Assembly: Dr. McCoy, Chairman of the Council on Professional Education and Hospital Relations, reviewed the topics and general program outline for the November SCIENTIFIC ASSEMBLY. The Board approved the report and commended Dr. William S. Cole, General Chairman, and Dr. James A. Curtin and other members of his Program Committee for developing what promises to be a most interesting program.

New Ad Hoc Committees: President Wilner suggested that 2 committees should be appointed at this time, one to arrange for the laying of the cornerstone of the new headquarters building and the other to plan for the 150th anniversary of the founding of the Society, which will be in 1967. The Board approved the following appointees and authorized the President to make any additional appointments that seemed desirable:

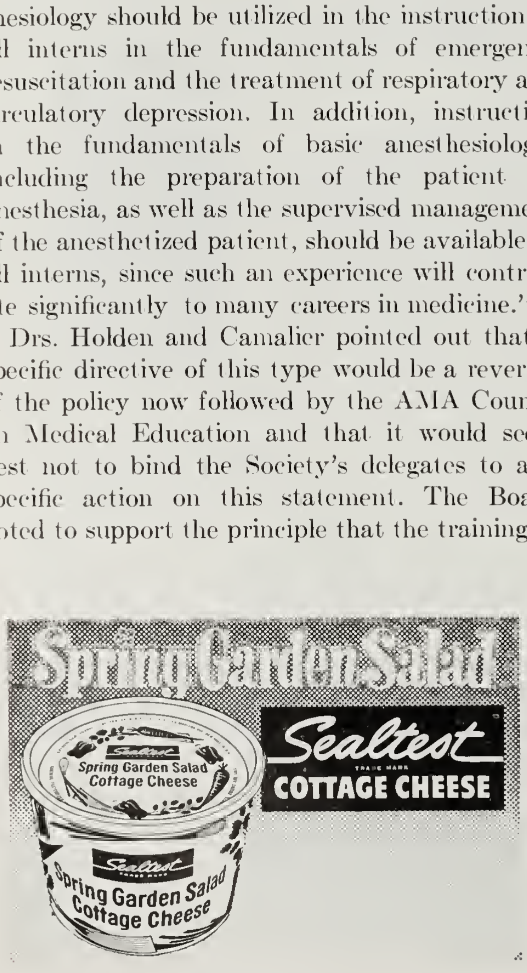
Cornerstone Laying Committee: Drs. Victor R. Alfaro, W. LeRoy Dunn, Edward W. Nicklas, Frank S. Pellegrini and Daniel L. Borden.

150th Anniversary Committee: Drs. Daniel L. Borden, Harry Zehner, Herbert P. Ramsey, William P. Herbst, and Paul R. Wilner.

Instructions to AMA Delegates: The Board considered a statement which will be introduced into the House of Delegates of the American Medical Association by the American Society of Anesthesiologists during the New York meeting in June. The statement, which was called to the attention of the Board by Dr. Thomas M. Peery, alternate delegate to the AMA, reads as follows:

"The resources of the Department of Anesthesiology should be utilized in the instruction of all interns in the fundamentals of emergency resuscitation and the treatment of respiratory and circulatory depression. In addition, instruction in the fundamentals of basic anesthesiology, including the preparation of the patient for anesthesia, as well as the supervised management of the anesthetized patient, should be available to all interns, since such an experience will contribute significantly to many careers in medicine."

Drs. Holden and Camalier pointed out that a specific directive of this type would be a reversal of the policy now followed by the AMA Council on Medical Education and that it would seem best not to bind the Society's delegates to any specific action on this statement. The Board voted to support the principle that the training of interns include the instruction of anesthesiology, with due recognition of its importance, as set forth in the above statement. It was agreed that the delegates should speak to this resolution if it seems indicated in New York.



Legislation for the Aged: Dr. Crain reviewed the activities of the Ad Hoc Committee in the development of material concerned with the proposed legislation on behalf of the aged. He discussed at some length H.R. 6675 and raised a number of questions about the benefits and persons eligible which need to be clarified. He stated that Dr. Wilner had requested an opportunity for this Society to testify before the Senate Finance Committee when H.R. 6675 is considered.

The Secretary summarized the points which seemed agreed upon by the Committee if the Society does testify before the Senate Finance Committee. The Board authorized the Secretary to confer with officials of the AMA on such proposed testimony and secure their comments, on the basis of which it would be determined whether a special meeting of the Executive Board is necessary.

Section on General Surgery: Prior to this meeting, members of the Board had received a letter and resolutions from the Section on General Surgery as well as a comment from Dr. Camalier regarding the letter. During the ensuing discussion there was a difference of opinion as to whether Sections should present recommendations relating to the fee schedule to the Executive Board or directly to Blue Shield. It was agreed that for the time being such matters might be considered by the Society's Relative Value Study Committee and that a letter be sent to the Section on General Surgery setting forth the Board's viewpoints, with formal action on the relationship between the Executive Board and the Sections on such economic problems deferred.

Medic Alert Program: Dr. Wilner reported on the efforts of the Society to bring about an agreement between the Health Department and the Metropolitan Washington Life Underwriters' Association in reference to promoting medical identification. Suggested policies and procedures for this 3-way sponsorship have been submitted by the Director of Public Health to the Society's Committee on Liaison with the Health Department.

Miscellaneous Business: At the last meeting of the Board it was agreed that Dr. William P. Herbst should represent the Society at the hearings on the D. C. Health Department budget.

CHECKS REPRESENTING THE AMOUNTS allocated by the AMA Education and Research Foundation to the 3 D. C. Medical Schools were presented by Dr. Paul R. Wilner, President of the D. C. Medical Society, to the deans in a brief ceremony in the Society's library, April 20. Left to right: Dr. Wilner; Dr. Angus M. Griffin, Associate Dean of George Washington University School of Medicine; Dr. Duane C. Richtmeyer, Chairman of the Medical Society's Executive Board; Dr. John C. Rose, Dean of Georgetown University School of Medicine; and Dr. K. Albert Harden, Vice Dean of the College of Medicine, Howard University.

Copies of Dr. Herbst's suggested statement were distributed and the Board approved the statement as written.

Dr. Richtmeyer reported that AMA-ERF checks would be presented to representatives of the D. C. Medical Schools on Tuesday, April 20, at 12 noon. The amounts to be distributed are as follows: Howard University College of Medicine, $6,052.58; George Washington University School of Medicine, $13,152.08; and Georgetown University School of Medicine, $18,562.74.

Dr. Philip Philbin was selected for nomination to the Board of Trustees of Medical Service of D. C. to succeed Dr. Alfred Brigulio.

The Board at its last meeting approved the recommendations of the Committee on Child Welfare concerning amendments to H.R. 3411 and authorized the Committee to present its recommendations and testify before the proper Committee of Congress. The Secretary distributed a letter to be sent by Dr. Robert H. Parrott to Congressman McMillan, Chairman of the House Committee of the District of Columbia, which would accompany the recommended changes in H.R. 3411. The Board approved this letter.

The Society had previously agreed in principle to the participation of the Society in certain medical programs being prepared at Airlie House under the direction of Dr. Murdock Head. At this time it was agreed that Drs. Wilner, Crain, and Warren D. Brill be authorized to work with Dr. Head in developing such programs, which would be co-sponsored by the Society.

Some publicity had been given in a Washington newspaper relating to a cobalt unit located in the Seven Corners Medical building. It was decided that this matter should be referred to the Grievance Committee.

There being no further business, the meeting was adjourned.

Meetings

Georgetown University School of Nursing is offering a short training course on **Nutrition in Chronic Disease** for professional health workers, July 26–30, 1965. The course is designed primarily for practicing professional nurses but admittance will also be granted to nutritionists, dietitians, and other appropriate interested applicants in order to provide an interdisciplinary approach to discussions. Lectures will be offered in nutrition and diet in current therapeutic treatment of obesity, diabetes, atherosclerosis, and cardiovascular diseases, and on the psychological aspects of food consumption.

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Among the personnel of the instructional staff are the following members of the D. C. Medlcai Society: Drs. J. Joseph Canary, DeWitt E. DeLawter, Frank A. Finnerty, James M. Moss, Richard H. Pollen, Leon Salzman, and Melvin D. Small.

Application forms, which may be obtained from the Dean of the Summer School, must be returned by July 15, 1965. The fee for the program is $45.00. A limited number of scholarships will be available.

The American Physicians Fellowship, Inc. is sponsoring an orthopedic seminar under the jurisdiction of the Israel Medical Association, to be held in Israel, August 4–15, 1965. This seminar will be under the direction of Dr. Melvin J. Glimcher, of Boston, Associate Professor of Medicine at Harvard Medical School and Director of Orthopedic Research Laboratories, Massachusetts General Hospital. The registration fee for the seminar is $50.00. There will also be a complete tour in connection with the meeting. Inquiries and reservations should be directed to the American Physicians Fellowship, 1622 Beacon Street, Brookline, Mass. 02146.

General News

The American Heart Association is accepting applications from research investigators for support of studies to be conducted during the fiscal year beginning July 1, 1966. The deadline for submitting applications for Established Investigatorships and Advanced Research Fellowships is September 15, 1965.

Established Investigatorships, with a stipend of $11,000 and increments of $1,000 yearly, are awarded for 5 years to scientists of proven ability who have developed in their research careers to the point where they are independent investigators. An additional $1,000 is given as a grant to the investigator's institution

Advanced Research Fellowships are awarded for 1- or 2-year periods to postdoctoral applicants who have at least 1 year of research training and experience at time of application but are not clearly qualified to conduct their own independent research. Base stipends begin at $6,500, plus dependency allowances and yearly increments. An additional $500 grant is made to the investigator's department.

Applications for **Grants-in-Aid** should be submitted by November 1, 1965. These grants are made to experienced investigators to help underwrite the costs of specified projects, such as equipment, technical assistance and supplies.

Research Fellowships, to provide training under experienced guidance for young scientists with doctoral degrees, are no longer being awarded by the American Heart Association. Applications for such support should be made to local Heart Associations.

Further information and application forms for research awards may be obtained from the Director of Research, American Heart Association, 44 East 23rd Street, New York, N. Y. 10010.

The Section on Anesthesiology of the Medical Society of the District of Columbia elected new officers, April 1. They are:

Dr. Mary Louise Barker, *Chairman;* Dr. Thomas E. MacNamara, *Vice Chairman;* Dr. Kamel J. Hassan, *Secretary;* and Dr. Helene G. Werner, *Treasurer.*

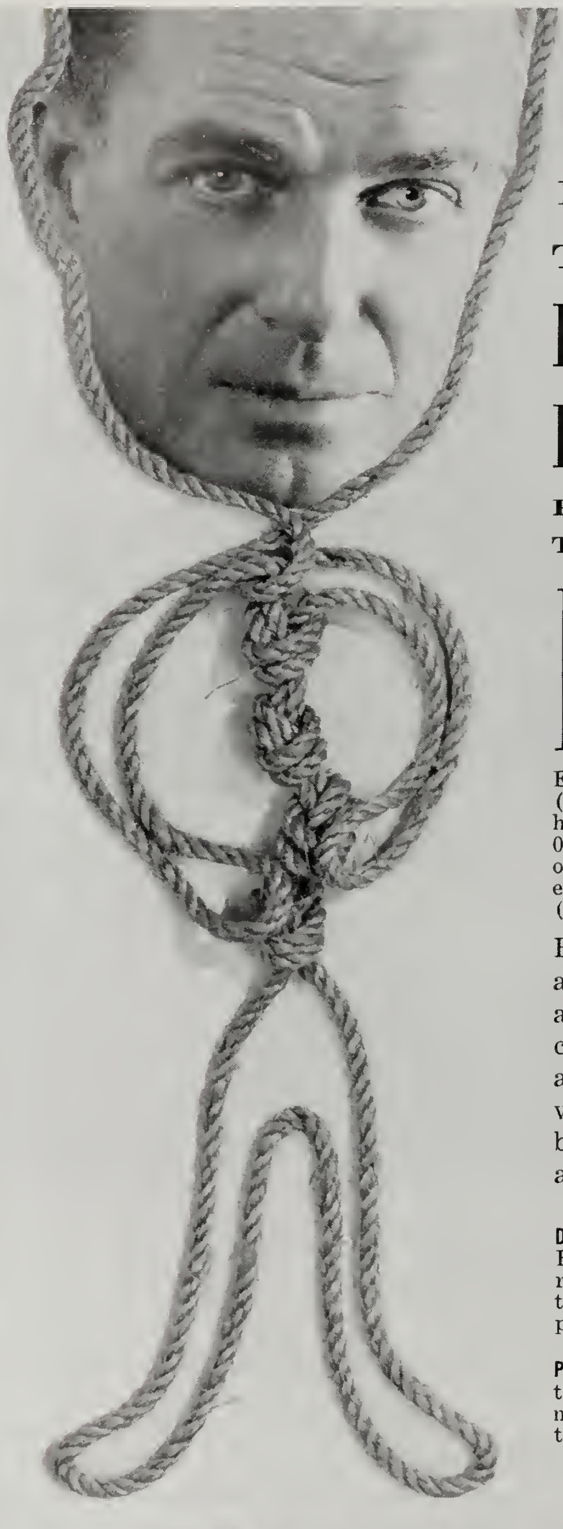
Officers of the **Washington Psychiatric Society** for 1965–66 are:

Dr. John D. Schultz, *President;* Dr. Paul Chodoff, *President-elect;* Dr. Richard A. Steinbach, *Secretary;* and Dr. Milton Meltzer, *Treasurer.*

The new Washington Veterans Administration Hospital was dedicated, April 28. The dedicatory speech was delivered by Vice President Hubert H. Humphrey.

The new facility has 710 beds—160 beds for surgical patients, 240 for psychiatric, 40 for neurology, 200 for medical, 40 for pulmonary, and 30 for rehabilitation. Located at 50 Irving Street, N.W., on the grounds of the U. S. Soldiers Home, the hospital was built at a cost of approximately $20,000,000. It has nearly twice the capacity of Mt. Alto, which it replaces. Patients were transferred from the latter hospital on May 3.

Dr. James A. Shannon, Director of the National Institutes of Health, was one of 35 new members elected to the National Academy of Sciences, April 27, in recognition of their distinguished and continuing achievements in original research. Election to membership in the Academy is considered to be one of the highest honors that can be accorded to an American scientist or engineer. Established in 1863 by a Congressional Act of Incorporation, signed by Abraham Lincoln, the organization acts as an official adviser to the Federal Government, upon request, in all matters of science and technology.



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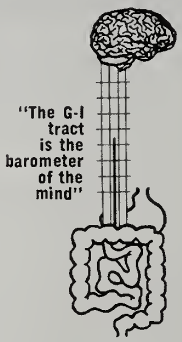
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The Doctors Symphonetta assisted the Washington Hospital Center in celebrating its Seventh Birthday by giving a concert in its auditorium on Sunday, April 25.

The Morris Cafritz Memorial Hospital, which is scheduled to open in January, 1966, will be one of the most modern medical facilities to be found anywhere and is expected to fill a critical hospital need for Southeast Washington and the Prince George's County area. Funds are urgently needed to reach its goal of 11 million dollars. Contributions will be appreciated and should be sent to the Greater Southeast Community Hospital Foundation, 1345 Good Hope Road, S.E., Washington, D. C. 20020.

Personals

Dr. Sol Katz, Professor of Medicine at Georgetown University School of Medicine, was the D. C. Medical Society's choice for the **1965 Kober Lecturer.** The address was delivered on April 21, 1965 in the auditorium of the Gorman Diagnostic and Research Building at Georgetown University Medical Center; the subject was "Doubts in the Shadows: The Physician and the Chest X-ray."

An alumnus of Georgetown University, Dr. Katz received his medical degree *magna cum laude* in 1939. He joined the faculty of Georgetown University in 1942 and this year was promoted to the rank of Professor of Medicine. In 1959 he began his work at the Veterans Administration Hospital as Chief of the Medical Service, a position he still holds.

Dr. Katz has won a national reputation as clinician, teacher, and clinical investigator. He is the author of over 100 publications in the scientific literature and is Associate Editor of GP. His chief research and clinical interests have been in the field of diagnosis and chemotherapy of tuberculosis and other pulmonary diseases.

Colonel John B. Coates, Jr., MC, USA, who is serving as Deputy Surgeon of the U. S. Army in Europe, was recently presented with the Legion of Merit with the Oak Leaf Cluster by General Paul L. Freeman, Jr., Commander in Chief of the U. S. Army in Europe. General Freeman is now Commanding General of the U. S. Continental Army Command.

COLONEL JOHN B. COATES, JR., MC, USA (right) has just been decorated with the Legion of Merit with Oak Leaf Cluster. With him is Major General Douglas B. Kendrick, Jr., Surgeon of the U. S. Army, Europe, who is examining one of the 30 volumes of the History of the United States Army Medical Department in World War II for which Colonel Coates was responsible.

Colonel Coates was decorated in recognition of distinguished performance while serving as Editor-in-Chief of the official history of the U. S. Army Medical Department in World War II and as Director of the United States Army Historical Unit in Washington, D. C. He was responsible for publishing 30 volumes, 26 of which dealt with the wartime experiences in the many specialty fields of medicine, surgery, and administration. He has also published 4 other volumes on related subjects. These volumes have been lauded by medical men throughout the world as an "unparalleled contribution to civilian medicine as well as military medicine." Colonel Coates is an Associate member of the D. C. Medical Society.

Dr. Fred R. Sanderson was elected to Honorary membership in the Washington Medical and Surgical Society at a special meeting, April 26, attended by 125 members and guests. His was the first Honorary membership conferred by the Society in 35 years. Dr. Sanderson is Professor of Surgery Emeritus of Georgetown University School of Medicine. He is also a Life member and a Past President of the D. C. Medical Society.

Dr. William B. Walsh, founder and President of Project HOPE, was invited to deliver the annual Presidential Lecture at the 15th Annual Meeting of the Student American Medical Association, held in Chicago, May 3–6, 1965.

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Dr. Kenneth M. Moser, an Associate member of the D. C. Medical Society, was elected to the Board of Directors of the D. C. Tuberculosis Association, at the annual meeting of the membership, May 3.

Dr. Donald Leeper is the new Commander of the Potomac River Power Squadron, which recently celebrated its Golden Anniversary.

Elected to Fellowship in the American College of Physicians, March 21, were **Dr. Paul R. McCurdy and Dr. Wesley M. Oler.** Elected to Associate membership in the college was **Dr. James S. Young.**

Dr. Edward J. Connor has been elected to Junior Fellowship in the American College of Obstetricians and Gynecologists.

Dr. J. Ogle Warfield has been appointed Staff Scientist and Surgeon for Bionetics Research Laboratories, Inc., of Falls Church, Va.

Dr. William D. Dolan, pathologist at Arlington Hospital and an Associate member of the D. C. Medical Society, has been elected to the Board of Directors of the Commonwealth National Bank of Arlington, Va.

Dr. Robert O. Knox, specialist in internal medicine, affiliated with the Food and Drug Administration, has the distinction of holding seniority number 5000 in the D. C. Medical Society. Dr. Knox, a medical alumnus of George Washington University (Class of 1950), was elected to membership in the Society on September 28, 1964.

Obituaries

Blanche B. Wilcox, A.B., A.M., Ph.D.

(1895–1964)

Dr. Blanche B. Wilcox, an Associate member of the Medical Society of the District of Columbia, died, August 25, 1964. She lived at 4201 Cathedral Avenue, N.W.

Dr. Wilcox was born, May 11, 1895, in San Jose, California. She completed all of her undergraduate and graduate work at George Washington University, receiving her doctorate in philosophy in 1932.

A medical biostatistician, she was engaged in cardiovascular research at the Veterans Administration.

Dr. Wilcox was elected to Associate membership in the D. C. Medical Society in 1947.

Her husband, U. V. Wilcox, died, March 13, 1965. Surviving is their son, Dr. U. V. Wilcox II, 6621-31st Place, N.W., an Active member of the D. C. Medical Society.

A Mace for the American College of Physicians

(*Continued from page 285*)

Upon completion of the carving, the silver head and base were mounted on the shaft. On March 16, almost 2 years to the day after arrival in Washington of the rough limb, the mace was finally ready for presentation to the College's Board of Regents. On March 25 it was carried on the shoulder of Dr. Ward Briggs, Wilmington, Del., Marshal of the College, as he led the colorful academic procession for the Golden Anniversary Convocation and the induction of new Fellows into the College.

Medicolegal Abstracts—Montgomery

(*Continued from page 290*)

not be read in the context of the case: "All of the serum hepatitis blood transfusion cases in which recovery has been sought on a theory of negligence have been unsuccessful. No recovery is allowed under the theory of negligence because medical science, despite all due care, cannot detect hepatitis in the blood, and the determination of whether benefits outweigh the risk is a matter of medical judgement in the particular case."

Robert R. Montgomery, M.D.

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1965

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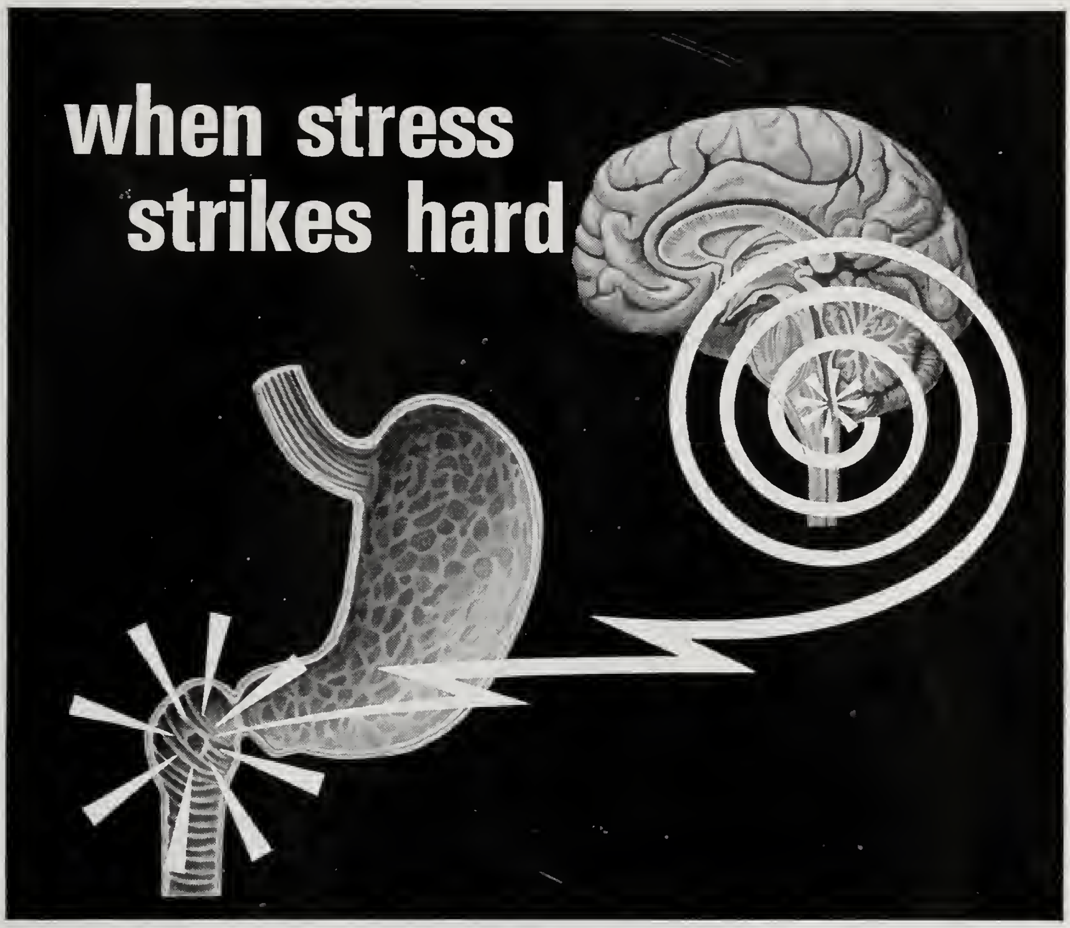

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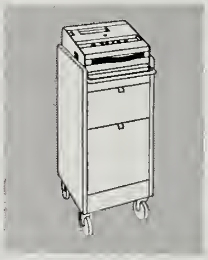

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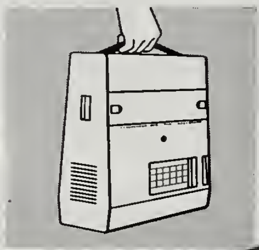

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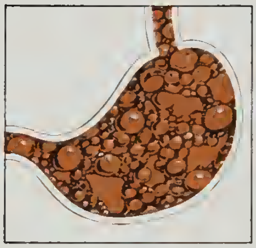

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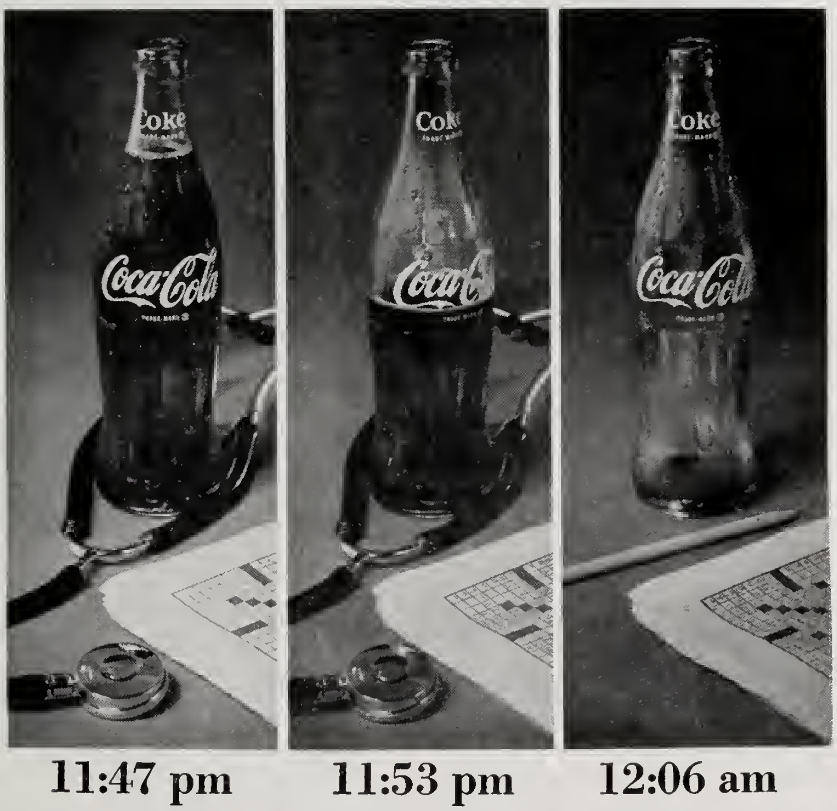

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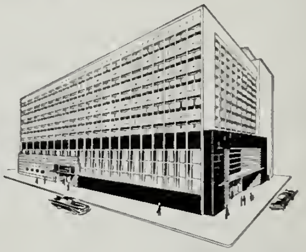

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- G. D. Searle & Company .25
- Smith, Kline & French Laboratories .12
- E. R. Squibb & Sons T-286
- The Stuart Company 17, 28–29
- Winthrop Laboratories .14

Pharmacies
- Higger's Drugs .30
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- Peoples Drug Stores .27

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- Food and Drug Administration .35

Sanitariums
- Kalorama Convalescent Home .35
- Kensington Gardens Sanitarium .21
- Magnolia Gardens Nursing Home .31

T–text

Please bring me some Regroton samples, Miss Brown.

Thanks.

Take one tablet every day with breakfast.

Just one?

Sure. One tablet works round the clock.

Regroton®

Superior to other antihypertensives in 76 of 80 patients in a 2-year study*

Geigy

Composition: Each tablet contains chlorthalidone, 50 mg., and reserpine, 0.25 mg.
Contraindications: History of mental depression, hypersensitivity, and most cases of severe renal or hepatic diseases.
Warning: Discontinue 2 weeks before general anesthesia, 1 week before electroshock therapy, and if depression or peptic ulcer occurs.
Precautions: Reduce dosage of concomitant antihypertensive agents by one-half. Discontinue if the BUN rises or liver dysfunction is aggravated. Electrolyte imbalance and potassium depletion may occur; take particular care in cirrhosis or severe ischemic heart disease, and in patients receiving corticosteroids, ACTH, or digitalis. Salt restriction is not recommended. Use with caution in patients with ulcerative colitis, gallstones, or bronchial asthma.
Side Effects: Nausea, vomiting, diarrhea, muscle cramps, headaches and dizziness. Potential side effects include angina pectoris, anxiety, depression, drowsiness, hyperglycemia, hyperuricemia, lassitude, leukopenia, nasal stuffiness, nightmare, purpura, urticaria, and weakness.
For full details, see the complete prescribing information.

Average Dosage: One tablet daily with b
Availability: Bottles of 100 and 1000 table

*Chupkovich, V.; Finnerty, F. A., Jr., and Kakaviatos, N.: The value of chlorthalido reserpine in moderately severe and seve tension: A two year study. Presented at t Inter-American Congress of Cardiology, June 14–19, 1964.

Geigy Pharmaceuticals
Division of Geigy Chemical Corporation
Ardsley, New York RE-3456

ATTENTION!

All members of the Medical Society of the District of Columbia who are *now insured* under the official income protection insurance program!

The Administrator of your plan, in keeping with the principle of providing the best coverage available to members of the medical profession, is pleased to announce that increased benefits are now available to eligible members*:

- **Increased weekly benefits**
- **Longer term of coverage for sickness**

You will be contacted shortly to provide you with details of these improved benefits and to advise you how they can be used to modernize your plan of income protection insurance.

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* This is an announcement only and does not contain any of the underwriting requirements for eligibility.

Joseph E. Jones, Administrator
1666 Connecticut Avenue, N.W.
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Tel. 483-3100

Mutual
MAXIMUM BENEFITS MINIMUM COST
OF OMAHA
INSURANCE COMPANY

The Somatic Mask: chest pain—heart disease or psychic tension?

Precordial pain as well as tachycardia, palpitation, breathlessness and faintness or arrhythmias are classic signs of cardiac disease. In many cases, however, they may represent a "somatic mask"—a psychophysiological equivalent of psychic tension.

Valium (diazepam) reduces the patient's disturbing psychic tension and helps improve such related symptoms as sadness and feelings of hopelessness, fatigue, insomnia, crying spells and nervousness.

In prescribing: Dosage—Adults: Mild to moderate psychoneurotic reactions, 2 to 5 mg b.i.d. or t.i.d.; severe psychoneurotic reactions, 5 to 10 mg t.i.d. or q.i.d.; alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hrs, then 5 mg t.i.d. or q.i.d. as needed; muscle spasm with cerebral palsy or athetosis, 2 to 10 mg t.i.d. or q.i.d. Geriatric patients: 1 or 2 mg/day initially, increase gradually as needed.

Contraindications: Infants, patients with history of convulsive disorders or glaucoma.

Warning: Not of value in the treatment of psychotic patients, and should not be employed in lieu of appropriate treatment.

Precautions: Limit dosage to smallest effective amount in elderly patients (not more than 1 mg, one or two times daily) to preclude ataxia or oversedation. Advise patients against possibly hazardous procedures until correct maintenance dosage is established; driving during therapy not recommended. In general, concurrent use with other psychotropic agents is not recommended. Warn patients of possible combined effects with alcohol. Safe use in pregnancy not established. Observe usual precautions in impaired renal or hepatic function and in patients who may be suicidal; periodic blood counts and liver function tests advisable in long-term use. Cease therapy gradually.

Side Effects: Side effects (usually dose-related) are fatigue, drowsiness and ataxia. Also reported: mild nausea, dizziness, blurred vision, diplopia, headache, incontinence, slurred speech, tremor and skin rash; paradoxical reactions (excitement, depression, stimulation, sleep disturbances and hallucinations) and changes in EEG patterns. Abrupt cessation after prolonged overdosage may produce withdrawal symptoms similar to those seen with barbiturates, meprobamate and chlordiazepoxide HCl.

Supplied: Tablets, 2 mg and 5 mg; bottles of 50 and 500.

Valium® (diazepam)

Roche Laboratories
Division of Hoffmann-La Roche Inc.
Nutley, N.J. 07110

ROCHE